The Revd H. B. Wilder
With the Author's kind regards.

ON

HERNIAL AND OTHER TUMOURS

OF THE

GROIN AND ITS NEIGHBOURHOOD.

ON

HERNIAL AND OTHER TUMOURS

OF THE

GROIN AND ITS NEIGHBOURHOOD;

WITH PRACTICAL REMARKS

ON THE

RADICAL CURE OF RUPTURES.

BY

CARSTEN HOLTHOUSE, F.R.C.S.,

SURGEON TO THE WESTMINSTER HOSPITAL, AND LECTURER ON SURGERY AT ITS MEDICAL SCHOOL;
LATE SURGEON TO THE ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL, AND TO THE
BRITISH HOSPITAL, SMYRNA, ETC. ETC.

LONDON:
JOHN CHURCHILL AND SONS, NEW BURLINGTON STREET.

MDCCCLXX.

J. E. ADLARD, PRINTER, BARTHOLOMEW CLOSE.

PREFACE.

This small work has its origin in two clinical lectures, delivered to the students of the Westminster Hospital in the year 1863. The object of the lectures was, first, to direct attention to the difficulties which occasionally beset the diagnosis of hernial tumours; and, secondly, to protest against the too prevalent practice of herniotomy in cases which, though temporarily irreducible, are unaccompanied by symptoms of strangulation. The present treatise is an expansion of those lectures, with many additional cases, illustrative and in support of the principles therein inculcated. The class of readers to whom these pages are addressed, being the advanced student and the young practitioner, and its main object diagnosis, as subsidiary to treatment, I have thought this would be more perfectly accomplished by a simple relation of cases, with the comments which they naturally give rise to, than by any set treatise on the subject. Most of the cases here narrated have come under my own observation, and are copied, almost verbatim, from my note books. I have not hesitated, however, when necessary for the illustration of my text, to borrow from that valuable collection of facts published by the Pathological Society; as well as from the classical works of Pott, Cooper, and Lawrence. I wish it also to be dis-

tinctly understood that the cases which illustrate errors of diagnosis or treatment, are published in no depreciatory spirit, but purely from a conviction that a knowledge of these is the best antidote to their recurrence; and as Frederic the Great is reported to have said that he learnt more by the loss of a battle than by a victory, so must we also have experienced a similar feeling after an error of diagnosis.

In conclusion, it may be proper to remark, that the word "tumour" is made use of, not only in its more restricted and technical sense, but in its etymological signification of swelling generally. The term groin, likewise, will include the region both immediately above and below Poupart's ligament.

C. HOLTHOUSE.

3, George Street,
Hanover Square, W.

CONTENTS.

CHAPTER V.

CHAPTER VI.

INDEX TO THE CASES.

ON HERNIAL

AND OTHER

TUMOURS OF THE GROIN,

&c.

CHAPTER I.

ON THE DIVISION OF THE SUBJECT, AND ON THE METHODS TO BE PURSUED IN THE EXAMINATION OF THE PATIENT.

Section 1.—*On the division of the subject.*

The tumours of which I am about to treat are all situated in the region a little above and below Poupart's ligament; including the labium, the scrotum, and the perineum, and they are divisible, primarily, into the hernial and the non-hernial. Hernial tumours may be treated of according to their variety and condition; non-hernial according to their consistency; and each again according to their complications; as seen in the following tabular arrangement.

- Hernial tumours according to their
  - Variety
    - As regards aperture of exit
      - Inguinal, crural, &c.
    - As regards sac contents
      - Bowel omentum, &c.
  - Condition
    - Reducible
    - Irreducible
    - Strangulated
  - Complications
    - With other herniæ
    - With non-hernial tumours
- Non-hernial tumours according to their
  - Consistency
    - Solid
      - Fatty
      - Fibrous
      - Glandular
    - Fluid
      - Serum
      - Blood
      - Pus
  - Complications
    - With hernial tumours.
    - With each other.

As this work, however, is rather a clinical record of cases, most of which have come under my own observation, than a set treatise on hernia, the above table is merely intended as a guide to the order in which the cases will be arranged, and though for tabular completeness the complications have been placed apart, they will not be thus separated in the context.

Section 2.—*On the methods to be pursued in the examination of the patient.*

For the detection and examination of tumours in the neighbourhood of the groin, the position of the patient is often of the utmost importance; many of them vary in size, alter their shape and tension, appear or disappear, according as the patient is standing or lying; even in both these positions small strangulated hernia may escape

detection, unless the trunk and lower extremities be placed perfectly straight. The late Mr. Stanley used to relate the case of a woman who was brought to St. Bartholomew's Hospital with all the symptoms of a strangulated hernia, but in whom no tumour could be detected. It was determined, however, in consultation, to make an exploratory incision in the region of the groin, and the patient was carried into the operating theatre for that purpose. On placing her on the firm and unyielding operating table, what the surgeons had failed to discover while the patient was in bed, at once became apparent—a small femoral hernia. In the recumbent position the weight of the buttocks causes them to sink below the rest of the body, and the thighs and abdomen are thus made to approximate. So likewise, if one explores these regions while the patient stands, it rarely happens that he maintains himself upright, but his body assumes the same curve as when he was lying. Hence, if the examination be made while the patient is erect, he should lean against the edge of a table or bed, and incline the body slightly backwards; or if he be lying, a hard pillow should be placed beneath the nates. In the digital exploration of the hernial outlets, on the contrary, it is best that the trunk and lower limbs should be slightly flexed, and in some cases it may be well to examine the patient in the erect as well as in the recumbent posture. A gentleman consulted me about an uneasy sensation he occasionally experienced in the left groin, especially after he had had much standing; this led him to examine the part, and

he said he could sometimes feel a small lump there. As he was exceedingly fat I could neither see nor feel any difference between the two sides; I therefore placed him on his back and examined the inguinal canals, which were large, and readily admitted my forefinger as far as the internal ring—there was no tumour in either. The patient was then told to rise from the couch and cough; I repeated the examination while he was standing—a small knuckle of intestine was now found protruding through the left internal ring into the upper end of the inguinal canal—the other canal was free.

Scarcely less important than the position of the patient, for the detection of small or deeply placed tumours, is the comparison of one inguinal region with the other; not one after the other, but together. The patient being recumbent and the nates supported as above directed, the lower part of the abdomen and the upper part of the thighs must be bared, when the eye will at once detect any difference of surface outline, should such exist. It is owing to the neglect of this practice, from motives of false delicacy on the part of physician or patient, that small strangulated hernia have been overlooked, and their symptoms attributed to some internal obstruction; owing to this, that writers have assured us that no tumour existed; whereas a comparison of the two sides, made in the manner above indicated, would, I believe, in many of these cases, have shown a want of symmetry or slight fulness on one side, which did not exist on the other.

If, in the various positions in which we have placed our patient, the eye can discover no tumour, we must next have

recourse to a digital examination of the hernial outlets. In the male this is easily effected; the external abdominal ring can always be made out, by simply hooking up a portion of the skin of the scrotum on the end of the forefinger and carrying it towards this opening, into which, if unobstructed, it will readily enter, and in many cases may be made to traverse the whole length of the spermatic canal. In the female, owing to the larger quantity of subcutaneous fat, the absence of any lax skin like that of the scrotum, and the smaller size of this aperture, this is impracticable; yet by feeling for the spine of the pubis, and carrying the finger a little upwards and inwards from this process, it will become placed directly over the external abdominal ring. Should there be a reducible and returned rupture, the aperture can generally be made out without difficulty, the finger sinking into it on slight pressure; but if the patient have never been the subject of hernia, the finger will fail to detect any opening. The best guide to the crural canal, in both sexes, is the femoral artery, whose pulsations can always be felt; by carrying the finger inwards from this vessel to the spine of the pubes, it will pass over the canal; should it be normal, and neither previously nor at the present time occupied by a hernial or other swelling, the finger will fail to detect any opening or depression, or even any impulse against it when the patient coughs; but the contrary will be the case under opposite circumstances.

And herein is indicated another means subservient to diagnosis, viz., the forcible and sudden action of

the expiratory muscles. By causing the patient to cough, the size of the abdominal cavity is suddenly diminished, and its contents subjected to a degree of compression which will force some of them through any aperture in the walls of this cavity, should such exist, or will cause a bulging at any weak point: hence a tumour, previously invisible, may be rendered apparent, or the prominence of another increased, the existence of which was not doubtful though its nature might be obscure. The impulse communicated to the fingers placed over such a tumour, affords unmistakeable evidence of a communication between it and the interior of the abdomen; this statement, however, requires qualification: we must carefully distinguish the character of such an impulse from that which arises from a tumour connected with the abdominal wall only: the former, is a distending, dilating impulse, arising from an absolute increase in the volume of the tumour; the latter, is a mere impulsion forward, of one which undergoes no change either of size or tension.

When one has to do with obvious and visible tumours, of the nature of which we are not certain, additional means of examination must be employed for their diagnosis, such as careful palpation, artificial illumination, and percussion. By the first, we judge of the consistency of the tumour, whether solid or fluid; or partly one and partly the other; of the degree and relative proportion of each; of its fixity or mobility, and whether continuous with the underlying structures or only contiguous to them; whether it has its origin *in* the part, or has

made its way there from some distant source. Illumination is chiefly of use in ascertaining the *nature* of fluid collections in the tunica vaginalis or elsewhere; while percussion, though long employed in and indispensable to the diagnosis of chest diseases, has been made little use of as a means of interrogating the contents of tumours; yet it is often of signal use, as will be seen in the sequel. To be effective, however, it requires to be done differently to what it is in the chest—a light sharp tap, such as is made with a fillip of the finger, is the best way of eliciting a reliable response.

There are some tumours which cannot be diagnosed by their mere physical characters, and for these we must seek the additional aid which may be afforded by their history, by the subjective symptoms to which they may give rise, and by the general condition of the patient. But even when we have employed all these means, still it is not always possible to decide at once on the nature of a tumour—an approximative or negative diagnosis may, it is true, be arrived at, so that we may be able to say what it is not, though we cannot always make out what it is. In some cases, again, we must guard against being misled by the patient, or by the presence of a truss which he may have worn for years, under the supposition that he was ruptured. In other cases, an exploratory puncture may be made; in others a simple waiting and watching, or expectant treatment as it has been called, should be adopted; while in others, a tentative or interrogative treatment should be pursued; this is particularly applicable to certain enlargements of the

testis, in which it is impossible otherwise, or short of a microscopic examination of the tumour, to determine its real nature, or whether it is of local or constitutional origin.

Having regard now to what has been stated in the preceding pages, it must be obvious that neither the physical signs, the subjective symptoms, nor the history of a tumour, can in all cases be exclusively relied on for a diagnosis; but all must be brought to bear on every doubtful case, and the evidence afforded by each carefully scrutinised and judicially weighed.

CHAPTER II.

ON THE VARIETIES OF HERNIA AS REGARDS APERTURE OF EXIT.

SECTION 1.—*Oblique inguinal Hernia.*

THE ordinary oblique inguinal hernia is usually described as of slow formation, in which the sac undergoes gradual enlargement and extension, before the pressure of a protruding viscus, till, having traversed the whole length of the inguinal canal, it finally enters the tissues of the scrotum or labium, and constitutes the fully developed, or complete scrotal or labial rupture. My experience, derived chiefly from the observation of hernia in the labouring classes, leads me to question whether with them this is the most common mode of its formation.* Quite as frequently it occurs suddenly, and is complete, or nearly so, from the moment of its first appearance. Under the influence of some violent exertion or a sudden shock, a portion of bowel or omentum, or both, are forced into the imperfectly closed or congenitally patent serous canal which originally transmitted the testicle, and a hernia, more or less complete, is then and there formed. The very term rupture implies suddenness, and was probably adopted from this the most

* I am aware that statistics are against me, but I am stating the results of my individual experience.

salient symptom of the most common variety of hernia. The reason why the frequency of the congenital form of hernia has not been recognised, is probably owing in part, to the association of the term congenital with infancy; and in part, to the belief that such protrusions must be contained in the tunica vaginalis and in contact with the testicle. Now neither of these opinions will stand the test of examination, for in point of time, although a congental hernia is undoubtedly met with most frequently in infancy, it is no less true, that given the conditions, it may occur at any period of life; that is, a certain proportion of the male population have some part of the serous canal, which originally existed between the internal ring and bottom of the scrotum, permanently open; and although such individuals may pass through life without a hernia occurring, they want but the presence of some of the conditions before mentioned, to render them the subject of it. The oldest patient that has come under my own observation, in whom a congenital hernia was for the first time developed, was sixty-five years of age. He was a perfectly healthy and hearty man for his age, and had never had a rupture, but while engaged on the top of a dung-cart, the horse suddenly went on, throwing him to the ground, where he fell heavily on his back: on rising, a hernia was found occupying the left side of the scrotum. In another case, of which I have notes, a rupture occurred suddenly, for the first time, in a patient fifty-four years of age, on the occasion of his lifting a carriage, the rupture going quite to the bottom of the scrotum. The

second error in connection with these congenital ruptures, namely, a belief that the protrusion is always contained in the tunica vaginalis, and in contact with the testicle, rests on as sandy a foundation as the former. As frequently, or more frequently, it only reaches the upper extremity of the testis, which gland is situated below the rupture, enclosed in its own proper tunica vaginalis, and not behind it, and in contact with it, as in the former variety. The difference depends on the circumstance, that in the one case the serous canal before alluded to—the vaginal process of peritoneum—is open in its whole length, from the abdominal cavity to the bottom of the scrotum; while in the other, a portion of this process has been pinched off below, to form the tunica vaginalis scroti; but the upper portion—the funicular process of peritoneum—remains open, and into this may be suddenly thrust a portion of bowel or omentum, constituting, no less than the former, a congenital hernia. If strangulation should take place in the latter, and an operation be done for its relief, of course no testicle is seen, and the case is looked upon as an ordinary and not a congenital hernia.*

The diagnosis of both these varieties of congenital hernia, from the so-called ordinary or non-congenital forms, cannot be made by a mere physical examination of the tumours, nor can it be based on the relative situation of the hernia and the testis, which is the same

* For further details on these two forms of congenital hernia, see Birkett, in Holmes' 'System of Surgery,' vol. iv, p. 234, *et seq.*

in both. It is upon the history then, that we must rely for our diagnosis, and this is comprised in one word—suddenness. The *sudden* appearance of a rupture of any magnitude is incompatible with the genesis of a hernial sac; the latter must have pre-existed, or we should be driven to the conclusion that these herniæ have no sacs, but have burst through the peritoneum in order to arrive at the locality in which they are found.

Besides the above two forms of congenital hernia there is a third, which differs from them, mainly, in the direction which the protrusion takes, viz., outwards into the bend of the thigh, instead of downwards into the scrotum or labium, and which I shall venture to name the inguino-crural. Like the other two varieties, its sac is not an acquired formation,* but exists as a congenital defect—the vaginal process of peritoneum in the male, and the canal of Nuck, as it is termed, in the female—remaining patent after birth, and thus acting as a ready-formed receptacle for a protrusion. If the testicle should not have descended, or only partially done so, the scrotum on that side is generally undeveloped; and a hernia passing out through the external ring, and finding no scrotal cavity to receive it, takes the direction in which it meets with least resistance, *i.e.* outwards: thus Mr. Aston Key, in recording a case of this kind, observes,

* Although I believe this to be true as a general rule, there may be exceptions, as in a remarkable case recorded by Mr. Hulke, where the sac, of acquired formation, occupied both the groin and scrotum, the testes remaining in the belly. 'Medico-Chir. Trans.,' vol. xlix, p. 189.

"The hernia, instead of passing downward into the scrotum, turned, after emerging from the inguinal canal, over the tendon of the external oblique muscle, and appeared somewhat like a femoral hernia. The testicle had never descended lower than the external ring, and explained the peculiarity in the course of the hernia."* But this explanation will not apply when the subject of this is a female; we must seek, therefore, for some additional reason for the hernia taking so unusual a course than an imperfectly developed scrotum; and this is probably to be found in the large size of the external abdominal ring, and the lax condition of its pillars, as illustrated in the following case.

Case 3.—*Congenital inguino-crural enterocele, with testicle in the same sac.*—C. P., æt. 21, a strong stout young man, was admitted into the Westminster Hospital on the evening of the 29th of May, 1868, for a large hernia in the left groin, which had made its appearance suddenly for the first time three weeks before, on jumping from a cart; but on the afternoon of his admission, while lifting a heavy flagstone into his cart, it had become much larger and also painful. At 9 p.m., the house-surgeon being in doubt as to the nature and condition of the hernia, asked me to see it. I found a large, oblong, prominent tumour, the size of a goose's egg, lying parallel with and above Poupart's ligament. It was moveable, highly elastic, and resonant on a fillip

* 'Memoir on the Advantages of Dividing the Stricture in Strangulated Hernia on the Outside of the Sac,' 1833, p. 25.

with the finger; the skin over it was neither tense, red, nor hot. There was no testicle in the scrotum, which could scarcely be said to exist on that side, but this gland could be felt, and formed the upper part of the swelling. On introducing the finger through the external abdominal ring, the outer margin of that opening was obscured by a fold of bowel which had passed through and out of the ring, and, finding no scrotum in which to descend, had passed outwards and upwards, and lay immediately between the integuments and the aponeurosis of the external oblique, constituting the tumour above mentioned. On pressing this downwards a portion the size of a large marble could be made to protrude into the upper part of the undeveloped scrotum. As handling was painful, and there were no signs of strangulation, the taxis was not employed, but ice was directed to be applied to the tumour, and two grains of opium in form of pill were ordered to be given every three hours, if necessary. On the following day, the tumour had disappeared, and nothing but a fulness occupied its former site; this was found to be owing to the testis, which occupied a large adventitious pouch between the skin and muscular aponeurosis, and could be pushed about from one part to another with the greatest freedom and without pain. The finger could also now be passed well into the inguinal canal, which was very large and caused no pain. The ring on the opposite side was small, and its pillars tense, and would only just admit the point of the finger, which gave pain.

It will be noticed in reading the above case that,

notwithstanding the bulk of the protruded intestine, the finger could readily be introduced into the inguinal canal, proving therefore, the large size of the ring and the lax condition of its pillars; this was further verified after the reduction of the bowel, and was in striking contrast with the condition of the opposite ring. Dr. Munro, in his 'Morbid Anatomy of the Human Gullet,' p. 467, has recorded such a case in the female: "The herniary sac," he tells us, "was about two inches in length, and in shape resembled a Florence flask; the bulbous extremity, extending from the lower orifice of the canal, was contained in the upper part of the thigh, lying more in the course of a crural than of inguinal hernia. By dissection, we ascertained that the deviation from the usual direction of the tumour, was produced by a premature separation from each other of the external pillars of the inguinal canal."

The following is a very interesting example of this rare form of hernia which occurred in a young female.

Case 4.—Irreducible congenital inguino-crural epiplocele, resembling an ovarian hernia.—Miss —, a fine tall young lady, 18 years of age, whilst swimming against another lady in the summer of 1864, and striking out with great vigour, felt a sudden pain and a sensation as if something had given way in the right groin; she could scarcely draw the thigh back again, and was at once disabled from further exertion. The pain, however, gradually subsided and she drove home, but was awoke the same night with a return of the pain in increased

force. On the following morning Dr. B., the family physician, was sent for, who examined a small, painful, hardish swelling about the size of a pigeon's egg, and perceptible to the eye as well as to the touch, in the right inguinal region, about midway between the anterior superior spine of the ilium and the symphysis pubis. The mode and suddenness of its occurrence, and the tension and tenderness of the swelling, led Dr. B. to suppose that it might be a small strangulated hernia, but when he found that the bowels responded freely to the exhibition of purgatives, and that no symptoms of strangulation were present, he looked upon it as an inflamed absorbent gland. An application of a couple of leeches, followed by fomentations and rest in bed for a few days, relieved the pain in the part and the tumour disappeared, so that shortly afterwards the patient was sufficiently well to make a tour on the continent, and was able to ride on horseback; but one day, after unusual exertion, and when she was on the summit of the Rigi, the tumour reappeared. "From this time," observes Dr. B., "any unusual exertion used to bring back the swelling. It always behaved like an inflammatory swelling, feeling like an inflamed gland. So much pain and discomfort resulted from movement, that she became practically confined to her couch." In the latter end of the summer of 1867 I saw her for the first time, and found a small tumour in the right groin, of an oblong form and about the size of an unshelled almond. It was soft, tender to the touch, and was not more evident when the patient stood than when she

was lying down. There was no appreciable impulse communicated to it on coughing, and it could not be reduced; according to the lady's account it had never disappeared since its first occurrence three years before, though its size had varied slightly, and also the degree of tenderness. I diagnosed a small irreducible epiplocele, but some weeks subsequently, on learning from Dr. B. that it became larger and more tender on the accession of each of her monthly periods, I altered my opinion and looked upon it as an ovarian rupture, in which opinion, all the facts of the case having been laid before Mr. James Paget, that gentleman concurred, as also in the propriety of its removal. Accordingly in the February of the following year (1868) I was again requested to see this lady with a view to the removal of the tumour by operation. At this time I could with difficulty detect the tumour, which made no projection; even when the buttocks were raised, it rolled under the finger like a loose absorbent gland, and did not seem larger than a shelled almond. It lay in the fold of the groin, its long axis being parallel with Poupart's ligament, and was situated at about the junction of the inner third with the outer two thirds of a line drawn from the anterior superior spine of the ilium to the spine of the pubis. It was cut down upon at once by an incision about two and a half inches long, and was inclosed in a capsule, which I detatched from the surrounding connective tissue quite up to the external abdominal ring, immediately outside of which it lay. Then, to make sure that nothing else was enclosed within this capsule or sac, it was opened,

and the supposed ovary at once displayed and nothing else. A ligature was now passed round its pedicle, immediately beyond and close to the upper end of the ovary, and just within the external pillar of the ring. The pedicle did not yield in the least to as much traction as could be borne. The wound was closed by three sutures, and healed by the first intention. On a subsequent examination of the tumour, assisted by my late friend and colleague Mr. Alexander Bruce, it turned out to be only a portion of omentum, but presenting externally exactly the appearance of an ovary.

Assuming that the tumour actually became larger and more tender during each menstrual period, it would be impossible, in the absence of a post-mortem examination of the body, to say on what this depended; but that there was some connection between this hernia and the uterus or its appendages, seems probable from other symptoms from which this lady suffered.

The chief interest attaching to the inguino-crural hernia lies in its resemblance to a femoral rupture, for which it may readily be mistaken. "There are many examples within my knowledge," observes Dr. Munro, "where this mistake was never discovered till after the operation had been performed."* Its diagnosis in the male can be readily established by a digital exploration of the inguinal canal, and by the absence of the testicle from the scrotum; in the female, by the normal condition of the femoral ring, and the fulness in the course of the inguinal canal; and in both by the sudden occurrence of the rupture.

* 'Morbid Anatomy of the Human Gullet,' p. 467.

In the treatment of these congenital varieties of hernia there is nothing special; and what is proper to be done in the several conditions to which hernia is liable will be pointed out in the chapter devoted to this part of my subject.

To present the reader with a bird's-eye view of the varieties of hernia spoken of in the preceding pages, I have arranged them as below.

- Oblique inguinal hernia
  - Ordinary
    - Sac formed gradually
      - Incomplete or bubonocele. Hernia in the inguinal canal.
      - Complete or scrotal. Hernia above the testis.
  - Congenital
    - Sac ready formed
      - Inguino-scrotal
        - Hernia above the testis.
        - Hernia in front of and in contact with the testis.
      - Inguino-crural
        - Hernia in bend of the thigh between the skin, and aponeurosis of the external oblique muscle.

Section 2.—*On the direct Inguinal Hernia.*

It is not always possible, nor is it essential, even in the event of strangulation, to distinguish between a direct and an oblique inguinal hernia, for it is only in large and old-standing herniæ that the two varieties are likely to be confounded; and practically, should an operation be necessary, the rule laid down by Sir A. Cooper must be followed, viz., to divide the stricture directly upwards. In the smaller and incomplete varieties, the form and direction of the swelling are usually sufficient to distinguish them—globular and

projecting directly forwards in the internal, oblong in form and oblique in direction in the external; the inguinal canal undistended in the former, distended in the latter. If the finger be inserted into the external abdominal ring it will pass directly backwards towards the abdominal cavity in the former; it will be resisted in this direction, but will pass readily outwards and upwards towards the internal abdominal ring in the latter.

There is a form of inguinal hernia occasionally met with, in which the protrusion takes place through the posterior wall of the canal, between the external and internal rings, and so by its distending the canal might be mistaken for an oblique. There is also another equally rare in which a hernia, after protruding through the fascia transversalis internal to the epigastric artery, passes outwards into the inguinal canal; and again, a bubonocele may be imprisoned within the canal, and continuing to increase without being able to escape through the external ring, may distend this passage and form a prominent tumour immediately above Poupart's ligament. Lastly, there is the co-existence of one form with another in the same side.

All of these, as I have no recorded cases to illustrate them, I shall pass by, and refer my readers to set treatises on hernia for further details.

Section 3.—*On the Femoral Hernia.*

The point at which this hernia escapes from the abdominal cavity being below Poupart's ligament, and that of

an inguinal above it, there would appear at first sight no difficulty in determining to which of these varieties the protrusion belonged; in point of fact, however, the difficulty is often considerable when the subject of the rupture is a female. In the first place, the line of Poupart's ligament which forms the boundary is by no means so easily traced as it is described to be in books, while the quantity of fat is often so considerable as to obscure both the tumour and its aperture of exit. Supposing Poupart's ligament to be traceable, one may be guided in one's diagnosis chiefly by the duration, position, and size of the tumour; a recent one could not be situated above Poupart's ligament unless it were inguinal; and in this case it would be small, ill-defined, and little prominent, causing a fulness rather than a tumour; while a small and recent hernia *below* that structure (Poupart's ligament) would show it to be femoral. A large and old femoral hernia might turn up over Poupart's ligament, and so occupy the inguinal region, but it would produce no alteration of the labium pudendi of the same side; whilst, on the other hand, a large and old inguinal would pass down into the labium, and produce a marked contrast between it and its fellow. "In a doubtful case," observes Lawrence,* "we should pass the finger along the bone from below upwards; if it enters the inguinal canal, that opening must be free, and we may therefore conclude that the rupture is femoral." And again, "The swelling of crural hernia covers the anterior crural ring, and leaves the abdominal

* 'Lawrence on Hernia,' 5th edit., p. 495.

ring open; while in bubonocele the latter is covered and the former open." A crural hernia in the female, therefore, is hardly likely to be mistaken for any other hernia except the inguino-crural, from which it may be distinguished by the signs already pointed out at p. 18. In the male, the examination of the hernial apertures is so easy that the error of confounding a femoral with an ordinary inguinal hernia can only happen through carelessness, and neglecting to examine the hernial outlets; this was probably the cause of the following case being mistaken for an inguinal rupture.

Case 5.—*Strangulated femoral hernia in the male mistaken for inguinal.*—A labouring man, 47 years of age, was admitted into the Westminster Hospital under my care, in 1863, with symptoms of strangulated hernia. The taxis had been employed before his admission, and I was informed that he had an oblique inguinal hernia. "A tumour of an oblong form occupied the left inguinal region, its long axis was parallel with Poupart's ligament, and it projected a little above this structure. It differed, however, from an ordinary inguinal hernia in the following important particulars:—1st. Its outline was more defined. 2nd. It was more prominent. 3rd. It was more superficial. An inguinal hernia in this situation must have been wholly or in part within the inguinal canal, and, therefore, beneath the aponeurosis of the external oblique; which, owing to its unyielding nature, would have prevented such a prominence and such a definition of the tumour as was here apparent; but the

decisive test for determining whether it were an inguinal or a femoral hernia consisted in carrying the finger into the inguinal canal. This you saw me do; invaginating a portion of the skin of the scrotum on the end of my forefinger, I passed it into the inguinal canal, and found this passage free, and the tumour lying in front of my finger. There could be no doubt, then, that this was a femoral hernia,—one of those cases I have before spoken of to you, in which the hernia, having presented itself at the saphenous opening, and continuing to increase, takes the course in which it meets with the least resistance, viz., upwards and outwards."*

Although, with ordinary care, a femoral hernia can generally be distinguished from an inguinal, there are some unusual forms which require great discriminative skill to diagnose from other swellings; thus, the protrusion may take place on the iliac side of the vessels, presenting, therefore, in the situation where a psoas abscess usually points, as in a preparation exhibited by Mr. Partridge at the Pathological Society,† and of which examples have been recorded also by Hesselbach,‡ Macilwain,§ and Lawrence.‖ M. Cloquet¶ had seen an instance in which the rupture had descended in front of the vessels, and another in which it had passed through

* 'Extract from 'Clinical Lectures.'

† 'Path. Trans.,' vol. i, p. 99.

‡ 'Lehre,' pp. 172—185.

§ 'Macilwain on Hernia,' p. 293.

‖ Op. cit., p. 486.

¶ 'Recherches sur les Hernies,' p. 85, prop. 46.

an opening in the posterior part of the sheath, so that it lay immediately on the pectineal fascia and behind the vessels. Again, the surface of the tumours may be rendered irregular by dense bands stretching across it in various directions, as it emerges from the saphenous opening; or it may be so altered in shape as to be of an hour-glass form, from a large vessel crossing over the front of the sac, as in two instances related by Macfarlane in the 'Edinburgh Medical and Surgical Journal,' 1837, p. 37.

Notwithstanding these anomalies of position and form, if the history and symptoms of the swelling are those of a reducible rupture, we may conclude that such is its nature, while their absence points to some other disease, the diagnosis of which will be considered when we come to treat of the non-hernial tumours which resemble hernia.

CHAPTER III.

ON THE VARIETIES OF HERNIA AS REGARDS SAC CONTENTS.

The ordinary contents of a hernial sac consist either of bowel, omentum, or of both ; and the means of diagnosing them, especially if the hernia is reducible, is not difficult. Thus, "if the surface of the tumour be uniform ; if it be elastic to the touch ; if it become tense and enlarged when the patient is troubled with wind, holds his breath or coughs ; if, in the latter case, it feels as if it were inflated ; if the part return with a peculiar noise, and pass through the opening at once, the contents of the swelling are intestine. If the tumour be compressible ; if it feel flabby and uneven on the surface ; if it be free from tension under the circumstances just enumerated; if it return without a noise and pass up gradually, the case may be considered an epiplocele ; if a portion of the contents slip up quickly and with noise, leaving behind something which is less easily reduced, the case is probably an entero-epiplocele." * But the sac of a hernia sometimes contains other structures than intestine and omentum ; such as the bladder or ovary ; or loose

* Op. cit., p. 50.

bodies unconnected with the abdominal viscera may gain entrance to it; or it may become distended with fluid; or the omentum may have undergone such alterations as not to be recognisable.

Of ovarian and vesical herniæ I will here only observe, that the former may be known by its becoming enlarged during each menstrual period; and the latter by pressure on the tumour giving rise to a desire to micturate, or occasioning the actual expulsion of urine. The loose bodies which have been occasionally found in a hernial sac, are analogous to the loose cartilages of joints, and hold the same relation to the peritoneum as these do to the synovial membrane; they are, however, of inferior importance surgically, and rarely give rise to symptoms calling for operative proceedings. One of these bodies, the size of a pigeon's egg, was, however, obliged to be removed from the scrotum of a patient by Mr. Shaw, on account of its interfering with the wearing of a truss, as recorded in the sixth volume of the 'Trans. of the Path. Soc.,' p. 204, to which the reader is referred for further information.* In the fifteenth volume, p. 99, there is also a case bearing on the subject I am now treating of, which I here extract.

Case 6.—*An elongated appendix epiploica resembling a cord and testicle.*—The specimen was taken from a patient who had been operated upon for a strangulated inguinal hernia on the left side. "The sac of the hernia was very large, and at its back part, as seen at the post-

* See also vol. xv, p. 97.

mortem, there lay a cord-like structure five inches in length; at the extreme end of this there was a body about the size and shape of the testis. On examining these structures they proved to be an appendix epiploica, very much elongated, coming from the sigmoid flexure of the colon, the pedicle having become stretched and descended into the sac." "The interest of the case," as observed by Mr. Cooper Forster, who exhibited the specimen, "centres in the possibility of its being mistaken for a cord and testis in an operation for hernia."

All writers on hernia have pointed out the changes to which the omentum is liable when long enclosed within a hernial sac. These consist, for the most part, of an increase in its bulk and density, or an alteration of colour or form; it is rare, however, for such changes to occasion difficulty in diagnosis, but should symptoms of strangulation at any time arise and an operation be undertaken, the tumour brought into view is often extremely perplexing to the surgeon. The following is a case in point, and shows not only how the first surgeons and anatomists may be deceived by the alteration alluded to, but how very unnecessarily the operation was undertaken. The case is copied verbatim, as written down at the time.

Case 7.—An omental hernia resembling a diseased ovary.—Mrs. T., æt. 40, applied at the St. Pancras Dispensary when I was surgeon of that institution on the 1st of April, 1840, for a large, tense, painful tumour occupying the left inguinal region, and extending into the labium; there was no tenderness in the abdomen,

which was quite soft; nor had vomiting taken place, and the bowels had been slightly moved the day before. The present swelling had appeared three days ago, and had resisted all her endeavours to return it. She states that she had been ruptured as long as she can remember, and for several years past has worn a truss; the hernia has come down at various times, and she has always been able to return it, with, she says when asked, a gurgling noise; it has been down sometimes as long as twenty-four hours. She is tolerably healthy looking, the pulse is at present a little accelerated, and she is thirsty; has had six children, and is suckling her youngest. Mr. Morton and myself having attempted in vain to reduce the swelling by the taxis, and it being now half-past seven o'clock p.m., she was recommended to go into the North London Hospital, where, at eleven p.m., she was operated upon by Mr. Liston, in the presence of Mr. Quain, Mr. Morton, several students, and myself. No intestine was found, nor omentum? nor stricture; but a curious-looking dark-coloured substance, somewhat resembling a small heart or kidney; this was connected with the abdomen by a yellowish, tough, tubular cord, about the thickness of a swan's quill. It was separated from this by a stroke of the knife, and the edges of the wound being brought together by two sutures, the woman was carried to bed. Neither Mr. Liston, nor any of those present had ever seen anything of the kind before; the operator imagined it was a diseased ovary, as there was a cyst at one end of the mass which was burst by the knife.

6th.—The surgeons having, since this operation, met with a somewhat similar appearance at a post-mortem, in which the mass proved to be omentum, they have concluded that it was so in the subject of the present operation. The woman is doing exceedingly well, and has not had one unfavourable symptom. Left the hospital perfectly well.

The following case is so extremely interesting and instructive, that I shall make no apology for extracting it entire from the pages of the 'Lancet.'*

Case 8.—*A congenital epiplocele resembling a testicle in the scrotum, the real testicle being contained in an omental sac in the groin.*

On the 16th of April, 1861, at two a.m., I was summoned by Dr. Houghton, the assistant surgeon to the Clay Cross Works, to a patient suffering from strangulated oblique inguinal hernia, whom I found drunk, collapsed, pulseless, and vomiting, apparently in great pain, and very unruly. On examination, I discovered a firm, oval tumour, the size of a hen's egg, in the left groin, and considerable fulness along the course of the inguinal canal. I entertained doubts as to the character of the tumour, but the patient not being in a position to give me its history, and the bystanders knowing nothing more than "that it had been down once before, and had been put

* "Unusual Complications of an Oblique Congenital Inguinal Hernia." By William J. Wilson, L.R.C.P. Ed., M.R.C.S.E., &c., Surgeon to the Clay Cross Collieries, Derbyshire. 'Lancet,' June 15th, 1861, p. 583.

back without cutting," I did not feel justified in leaving my drunken patient with such a suspicious tumour in his groin.

Dr. Houghton at once administered chloroform, and it acted as a direct stimulant to the nervous system and to the heart's action, as, indeed, I believe it almost invariably does in collapse the result of injury. The patient having been brought fully under the influence of the chloroform, I applied the taxis, but without success, and then proceeded with the usual operation for the relief of oblique inguinal hernia. I found it necessary to divide some constrictions at the internal abdominal ring, after which a portion of the tumour was returned into the abdomen with an unmistakeable gurgle. A tumour, however, still remained in the groin, between the scrotum and the external abdominal ring. I re-introduced my finger into the inguinal canal, and *found only the spermatic cord*, and that the communication with the abdomen was quite patent. Now came the question—What is this tumour? Not an undescended testis, for there are two in the scrotum. Is it, then, a hydrocele of the cord? I applied the knife, divided a fibrous membrane, and then there exuded a number of fine, vermiform, yellowish filaments, each accompanied by a congested vein; and on squeezing the testicle (?) in the scrotum, these filaments and veins protruded all the more from the cut in the inguinal tumour. I now felt certain that I had cut into a portion of the testis, and believed that the inguinal tumour was the globus major of the epididymis, enlarged by disease, and that the vascular filaments were coni vasculosi. The

gut being fairly returned, however, I felt only a temporary pang at having wounded the testis, and was content to labour for a few days under the imputation of having operated on a testicle in mistake for a hernia.

Eight hours subsequent to the operation I obtained the following history from the patient:—He has always had *two* testicles in the scrotum, and has remarked that the left one (corresponding to the groin operated on) has always been a little smaller than the other. Never observed a tumour in his groin, except on one occasion, when "it came down" while he was lifting a weight. It was returned by my late assistant, Mr. Carter; and he had leeches applied to his abdomen, and took pills and medicine. On the present occasion he remembers sneezing, then "feeling something give way in his groin," which caused such great pain that he fell to the ground. "Drunk and incapable," there he lay until found by his friends at two a.m.

The history was simply that of a hernia of the gut. Had I then erred as to the tumour left in the groin? Had I left a lump of omentum there? I felt certain that I had not erred, and that my patient's history was not correct. Both Dr. Houghton and myself had passed our fingers into the abdomen; both had felt that the inguinal canal contained nothing but the spermatic cord; both had seen the spermatic ducts (?) ooze through the cut in the inguinal tumour when the testis (?) in the scrotum was squeezed; both of us had felt the tumour, and traced the spermatic cord passing into it. How could we be mistaken? The sequel will show how far we were correct in our diagnosis.

Nine p.m.: Swelling and intense tenderness of the testicle (?) in the half of the scrotum corresponding to the groin operated upon; pain and tenderness along the inguinal canal and over the lower part of the abdomen; anxious expression; pulse 120, small and wiry; great nausea and faintness; slight bilious vomiting; no action of the bowels. I diagnosed *orchitis*, consequent on the puncture of the portion of testis (?) in the groin; and peritonitis, the result of the strangulation of the bowel and of the operation; and I saw in this orchitis (?) a confirmation of my opinion as to the nature of the inguinal tumour. Ordered twenty leeches to the tender parts; calomel and opium every two hours; and the effervescing citrate of potash with prussic acid.

17th.—The peritonitis has become more general, but the scrotal tenderness is much less marked. Ordered a repetition of twenty leeches, and to continue with the calomel and opium. Flatus has passed freely per rectum, but no stool. Vomiting continues, but the ejecta have not the slightest suspicious appearance or smell.

18th.—Dr. Booth, of Chesterfield, kindly met me in consultation, and to him I stated every particular relative to the history, the operation, and the subsequent treatment of the case: the main points of my statement being that a knuckle of intestine had been returned, completely and satisfactorily, but *no sac opened*, and I believed there was none; that the remaining inguinal tumour was *part of*, if not *the* testis; and that I had satisfied myself of this by opening it. I asked whether the symptoms called for any further operative interference. Dr. Booth replied

that *the testicle was certainly in the scrotum;* but that he would not hold himself reponsible for what was in the groin. Believing my statement as to the complete return of any abdominal protrusion that might have been present, he did not consider the existing symptoms more urgent than frequently occurred after the operation for hernia, and he should not advise an operation, but should rely on calomel and opium, fomentations, &c.

19th.—Ten a.m.: Has passed a tolerable night, and is improved in every respect. The abdominal and scrotal tenderness has almost entirely disappeared; the wound in the groin is sloughy and painful. I administered a copious enema of warm water. It returned in about half an hour, slightly discoloured and smelling very offensively.—Ten p.m.: Vomiting has been very urgent for the last two hours, and the ejecta have a fæcal appearance.

20th.—Vomiting decidedly fæcal and very copious. Bowels not moved. Complains of great pain about the umbilicus and left groin. The patient insists that "there is an obstruction," and prays that it may be removed.

I now began to feel that a second operation was imperatively demanded, and that in all probability we should find a knuckle of intestine had again been forced into the inguinal canal (rendered unusually patent by the recent operation) during the act of vomiting, no pad having been applied in consequence of the tumour left in the groin.

21st.—Two p.m.: In the presence of Dr. Booth, Dr. Houghton, Mr. G. O. Siddall, and two medical students, I turned up the flaps made at the previous operation, and exposed a tumour, of the size of an egg, thickly coated with

recent lymph. After scraping off some of this lymph we found the tumour to consist of two distinct parts, the upper portion being a knuckle of inflamed intestine, and the lower the testis (?). The intestine was flaccid, and overlapped the upper portion of the other tumour. I enlarged the incisions made on the previous occasion, so as to expose the whole of the inguinal canal, and found that by simply breaking down the recent lymph which connected the bowel with the canal and the internal ring, I could readily pass my finger into the abdomen. Observing this, together with the flaccidity of the bowel, I felt that the hernia was *retained* in the canal by the inflammatory products rather than *strangulated at its neck*. Partly with my finger, partly with an edgeless knife, I broke through the remaining adhesions, and then returned the bowel with the greatest facility. The gentlemen present now examined, with their fingers, the tumour left in the groin and the one in the scrotum, but without satisfying themselves as to which was really the testis. The prevailing opinion was that the *testis was in the scrotum*. Each tumour felt as though a "cord" passed into it. The examination was merely tactile, the inguinal canal having been ascertained to contain nothing but the spermatic cord, and the communication with the abdomen to be quite free. The vomiting and sense of "obstruction" were relieved by the operation; but the patient died thirty-six hours afterwards in a state of collapse, no hiccough having occurred, and the bowels not having acted.

Autopsy. — I regret that a thorough post-mortem investigation was not permitted, and that I was compelled

to pledge my word that none other than the parts previously operated on should be examined, and that these should not be removed from the body. Dr. Booth assisted at the examination. To the eye and to the touch there appeared to be three testicles, two in the scrotum and one retained in the left groin. The inguinal canal and groin were now laid open. The proper inguinal canal contained, apparently, merely the cord, and was lined with a layer of recent lymph. In the groin was a tumour coated with lymph, which lymph was found to conceal a thin layer of blood-vessels and (what looked like) nerves, connected by a very fine membrane. This layer passed into the scrotum. The tumour proved to be an undescended testis, with its epididymis and cord. So far, then, with the exception of this nervo-vascular (?) membrane, the relation of parts was such as would ordinarily exist in a case of congenital inguinal hernia prior to the descent of the testis into the scrotum, and prior to the occlusion of the processus vaginalis from the general peritoneal cavity. The testis and epididymis were quite healthy, and neither of them wounded. No doubt "the fibrous membrane" covering the testis, which I divided on the occasion of the first operation, was the peritoneum, or, to speak strictly, the processus vaginalis, thickened as a hernial sac becomes thickened when long exposed; and the filaments which I evacuated, and mistook for "coni vasculosi," were a portion of the nervo-vascular (?) membrane which I have alluded to. I explain the reason of my not exposing the testis thoroughly at either of the operations thus:—The incision through the skin was a

long one (and subsequently enlarged by a shorter one made at an acute angle). The deeper incisions were confined to the *upper portion of the wound*, and the intestine was reached without opening any sac of which I was cognisant. This, of course, is usual in congenital hernia. Having returned the gut thoroughly, the testis felt (through the remaining undivided layers of tissue) like a distinct tumour, as indeed it was, and I did not feel justified in doing more than making such a puncture or (if necessary) incision as should satisfy me as to its nature. I felt satisfied that the filaments which exuded on making this puncture were "coni vasculosi," and so made no further dissection. I was wrong, and no doubt my explanation may not be considered satisfactory. I rest satisfied with having done my duty to the best of my ability. It is impossible to place "old heads upon young shoulders" with any prospect of forming a successful combination. The testis was now removed from its position. Behind it we found a corrugated, crumpled-up thick substance, coated with fibrine. The canal became contracted immediately below the testis, so as to form a neck, through which the substance just named passed, as also the film from the front surface of the testis. The finger could be passed through this contracted portion of the inguinal canal into the scrotum, and here the canal expanded into a globular cavity, which was filled with some membranous substance, which we presently examined. We laid open the scrotum, and exposed a glistening oval, fibrous body, about the size, and having really somewhat the appearance of a testicle. It had a

neek too, which during life, and even on tactile examination after death, passed very well for a spermatic cord. We opened this curious body, and found it to be a strong fibrous envelope, about the eighth of an inch in thickness, lined with reeent lymph, and containing a globular something, also coated with lymph. This indefinite something we found to be an undeveloped, highly vaseular portion of omentum, crumpled up like a veil into a roundish mass, with a process or neck passing from it through the eontraeted portion of the eapsule; the main portion then passing behind the testis, and beeoming firmly attaehed to the spermatie cord and to the posterior wall of the inguinal canal, whilst a thin film passed in front of the testis, and contributed to form the "eoni vasculosi," whieh I evaeuated at my first operation. The fibrous envelope beeame mueh thinner at its neek, and gradually lost itself in the lining of the inguinal eanal.

Remarks.—I take it that in this case the communieation between the general peritoneal cavity and the proeessus vaginalis lining the inguinal canal and scrotum had never been elosed; that a portion of omentum passed during fœtal life into this vaginal process prior to the descent of the testis; that the fibrous envelope consisted of peritoneum, fascia transversalis, and intereolumnal fascia, blended together and developed into a strong eovering for the proteetion of the exposed portion of the peritoneal cavity and of the misplaced omentum; and that the testis remained in the groin, because its arrival in the scrotum had been anticipated and its place oecupied by the protruded omentum. The eanal of the processus vaginalis,

when examined after death, was found to be contracted, first, at the internal abdominal ring; secondly, just above the testis; and, lastly, at the point where it formed the neck of the scrotal tumour. The contraction at the internal ring no doubt explains the reason why the hernia of the gut was not constant. I would again allude to the omentum. Is it possible that the testis passed, during fœtal life, between the layers of the great omentum? It certainly was between them when we examined the body. The appearance, too, of this omentum was very deceptive and peculiar. The thin film in front of the testis (in the groin) looked just like a number of veins and nerves connected by the fine fibro-cellular tissue, but coated on the external surface with soft, recent lymph. Posteriorly, this fine, vascular membrane was, as I have said, corrugated and crumpled up into a rounded substance about the size of the little finger, which expanded above and became firmly connected with the spermatic cord and the wall of the inguinal canal, and likewise expanded below so as to form the globular mass found within the fibrous capsule in the scrotum."

The above case naturally leads to the consideration of another important modification which the omentum undergoes in certain cases of hernia, viz., its conversion into a complete bag, constituting thus an adventitious sac within the proper hernial sac; into this pouch a portion of intestine may pass and become strangulated. Cases of this description have been alluded to by Cooper,* Lawrence,† and Richter,‡ and in the sixth

* Cooper. † Op. cit., p. 309. ‡ Traité des Hernies, p. 133.

volume of the 'Path. Soc. Trans.,' p. 211, Mr. Wm. Adams has put on record the following :—"Within the peritoneal sac I found a mass of omentum, compressed and adherent to the neck, so that the finger could not be passed into the abdominal cavity. I proceeded to unfold the omentum in search of intestine, and in the centre of the mass exposed a tense, dark-coloured membrane, much resembling, as first seen, a knuckle of intestine. The resemblance became less on further dissection; it was, too, globular and tense, evidently of considerable thickness, and not sufficiently defined and distinct from the investing fat. I dissected still further towards the neck, and when the surface was thoroughly denuded, a fortunate circumstance occurred. During an effort of vomiting from the chloroform, this tense globular body suddenly collapsed, and a little fluid oozed from the neck. At this point I found an entrance for the director; it moved freely in all directions in the interior of the collapsed sac, which I therefore laid open. It was empty, and from its cavity the end of the little finger could be readily passed into the abdominal cavity, through the femoral ring, the boundaries of which could be readily recognised." Mr. Adams considers that a knuckle of intestine had been in the sac when he commenced the operation, but that it had suddenly returned during the effort of vomiting. To Mr. Prescott Hewett* is due the merit of having pointed out the mode of formation of these sacs. "An epiplocele takes place, and the portion of omentum which is protruded becomes altered in

* 'Med.-Chir. Soc. Trans.,' vol. xxvii.

structure, and its folds firmly united to each other by the effusion of lymph, but within the abdominal cavity, in the neighbourhood of the ring, the folds into which the omentum has been drawn may not be agglutinated; they will thus leave spaces into which a knuckle of intestine may insinuate itself, pass through the ring, and form for itself a bed in the altered mass of omentum which is the hernial sac. It may happen that two or three portions of gut may slip into the different spaces left between the folds of the omentum, and subsequently form for themselves separate pouches. Several separate sacs with narrow necks may be thus found in the omental mass which is in the hernial sac."

When that paper was written Mr. P. Hewett had not met with any case of this peculiar form of omental sac; but two or three years subsequently, on examining the body of a man affected with a scrotal rupture, but who had died of some other disease, he found the following condition of parts. "The omentum in the hernial sac was of the shape and size of a common pear; it was intimately united throughout to the hernial sac, and the greater portion of it, very much thickened, formed a perfectly solid mass; but close to the external ring, and in the inguinal canal, it was only slightly thickened and drawn into folds, in the centre of which was a well-formed pouch large enough to lodge a good-sized coil of intestine. One extremity of this pouch reached a little lower than the external ring; the other was in the belly, and about an inch higher up than the internal ring. At this entrance into the pouch the various folds into which the

omentum was drawn had become united to each other by their margins only, and thus formed a complete ring the circumference of which was very firm in texture, and the size about that of the middle finger; above this ring the omentum was quite healthy in structure."

"A case of this description," observes Mr. Hewett, "might, it was very evident, become extremely perplexing to the surgeon. In this patient, a convolution of intestine dropping into the pouch formed in the omentum might have become strangulated by the adventitious ring, and the surgeon cutting down upon the hernia in the scrotum would there have found simply a solid mass of omentum; and had he not proceeded to examine the parts in the neighbourhood of the external ring, would never have discovered the bowel in the omental sac; and even supposing that he had discovered the sac, to relieve the strangulation he would have been obliged to have laid the whole of the inguinal canal freely open, and to have got into the abdomen to divide the neck of the sac, which was an inch higher up than the internal ring, and might have been the sole cause of the stricture." *

The following case, where death resulted from an undiscovered strangulation by the neck of one of these omental sacs, confirms the accuracy of the preceding conjectures.

Case 9.—Double hernia on the same side, with symptoms of strangulation, one reduced, the other undiscovered and strangulated by the neck of the omental sac.—The

* 'Path. Soc. Trans.,' vol. iii, p. 98.

patient came under the care of Mr. Chaldecott, of Dorking, suffering from constipation, vomiting, and prostration, with abdominal pain. A tumour as large as a hen's egg was found in the right groin. The man affirmed that the tumour had been there seven years at least, and that till three days ago he had been able to get it all back. All attempts at reduction having failed, Mr. Chaldecott proposed operation, which was refused. On the following day stercoraceous vomiting and other of the worst symptoms of strangulation having set in, the man begged that the operation might be performed. Mr. Chaldecott cut down to a knuckle of intestine, and found the abdominal ring but very slightly contracted; this constriction was relieved, and the intestine returned. There still remained, however, on the inner side of the ring, and attached to its inner column, a hard compact lump, apparently solid, and consisting of indurated omentum. This could not be reduced, neither did it appear wise to cut away so large a tumour; it was therefore left, and the wound closed. The symptoms, however, did not abate, and on the third day the man died. On first opening the abdomen, it was remarked that the small intestines lay quite bare, uncovered by omentum, and that the pyloric end of the stomach was very low. An examination of the parts involved in the hernia showed a rounded tumour about two inches in diameter, consisting of a membranous material, disposed in folds, as though wrapped round and round itself, and containing lobules of hard granular fat; it consisted evidently of indurated thickened omentum. The tumour,

however, was not solid, but was hollowed by a cavity that contained a knuckle of intestine, dark, and all but sphacelated. The intestine found its way into the cavity thus: the tumour was attached to the inner column of the ring in such wise as to cover its inner angle, and opposite that inner angle was an opening into the tumour and its cavity, which formed, as it were, a prolongation of the inguinal canal. The margin of the opening into the lump was contracted so as to constrict the intestine very considerably; indeed, here was the true seat of stricture.

From this examination it was evident that the course of the case was as follows:—The man was wrong in stating that he could return the hernia, for the lump above described must have been for years irreducible; it consisted of omentum much thickened, rolled upon itself and round a cavity which always, or nearly always, contained a knuckle of intestine. In the usual condition of things a coil of gut could descend along the inguinal canal, and pass straight into this tumour; but a few days before the man came under care, a portion of intestine escaped from the outer angle of the ring and became placed on the outer side and below the tumour. This condition produced irritation, and when symptoms of strangulation called for operative measures, Mr. Chaldecott readily found this last-named piece of intestine and returned it; but it was barely possible that he should find that small portion, which in passing from the canal into the tumour was covered by the new hernial sac.

But since the strangulation was placed at the neck of this tumour it of course went unrelieved." *

The communication of a hernial sac with the general peritoneal cavity sometimes becomes obliterated by adhesion of its neck, or by the latter becoming plugged by, or adherent to, a piece of omentum or intestine. Under these circumstances fluid may accumulate in the unobliterated portion, and constitute a hydrocele of the hernial sac. There is no difficulty in detecting the presence of fluid in these cases, by the fluctuating character of the swelling and its dulness on percussion, while the absence of tenderness and redness excludes the possibility of its being pus; but there are no physical means of ascertaining whether it is a simple cystic or hydatid tumour, or a hernial hydrocele; we rely therefore on the history of the swelling, which is always that of a hernia. Thus we have the history of a rupture with the physical signs of a cystic tumour: if this contain beside fluid, bowel or omentum, they can generally be detected by making lateral pressure on the tumour at its base, alternating with backward pressure; and should the tension be too great to admit of this, a portion of the fluid may be withdrawn through a small canula, when the laxity of the walls will render it easy to discover whether ought but fluid is contained within.

Case 10.—*Hydrocele of the hernial sac supposed to be a simple cystic tumour—radical cure of.*—E. J., æt. 44, was

* 'Path. Trans.,' vol. xvii, p. 115.

admitted into the Westminster Hospital under my care on July 29th, 1862, for a tumour in the left groin which she wished to have removed. It was about the size of a large orange, translucent, fluctuating, dull on percussion, and painless; the skin over it was of a natural colour, and on deep pressure a solid substance could be felt in its interior; an impulse which was communicated to it on coughing, was not distensive, and was but doubtfully perceived, when the tumour was pulled forwards so as to lift it from off the abdominal wall. The attachments and connexions of the tumour could not be made out, and it could not be isolated, so to speak, from the subjacent tissues. *History.*—The patient first noticed it about twelve years ago; after standing all day at the wash-tub she felt an uneasiness in the right groin, and, on examining it, discovered a tumour about the size of a walnut, which felt soft, and could be pushed back. As it was not painful she consulted no one, and it gradually got larger. Occasionally, after unusual exertion, it would increase in size and become painful and inflamed—"gather," as she termed it—but by rest these symptoms would subside. She had never worn a truss, but the size and weight of the tumour increasing, and incommoding her in walking, she was led to consult one of my colleagues, who considered it a cystic tumour. The history of this case was so clearly that of rupture, that I never had any doubts of its nature, and on

Aug. 12, having drawn off ten ounces of clear straw-coloured fluid, the solid substance (thickened omentum), which another surgeon considered to be the thickened

wall of the cyst, was felt to be quite within the cavity of the sac. The further treatment of this interesting case consisted in cutting through the tumour (in which the fluid had re-accumulated) parallel with Poupart's ligament (Aug. 19th), dissecting the sac from its surrounding connections, placing a ligament around its neck, which included in its noose the protruded omentum, and cutting them both off close to the ligature. There was scarcely any bleeding, but a large cavity was left which was filled with lint. She made a good recovery and was on the point of being discharged on September 27th, when she called my attention to her legs, which were œdematous, and on examining her urine, it was found to be loaded with albumen. She was now turned over to Dr. Fincham, under whose care she remained till November 25th, when she was discharged cured.

On May 31st, 1864, or nearly two years after the operation just described, she was readmitted under my care with another femoral hernia in the site of the old one. The redundant skin left after the last operation formed the outer covering of a fresh protrusion, which only descended when the patient stood up, going back again when she lay down. Although the patient looked well, her ancles were swollen and her urine highly albuminous; she was therefore again transferred to Dr. Fincham, but on August 3rd, being anxious to have something done to relieve her of the tumour, or to render the application of a truss possible, a clamp was applied to the neck of the tumour and screwed nearly up. A note made on the 8th is here transcribed. "The clamp has been quite screwed

home, and the tumour is now completely strangulated; ulceration has taken place around its base, but the cuticle of its surface has not separated. She is now menstruating, is free from all symptoms, and has full diet and a pint of porter daily." On the 11th the slough separated, but the clamp was left on, and on the 13th it was removed, and a linseed-meal poultice applied to the mortified pedicle. On the 20th this had nearly been cast off, and healthy granulations had sprung up around. On the 31st the whole wound had thoroughly healed, and on the 13th of September she was discharged cured, and wearing a truss. From first to last there was no unfavorable symptom, notwithstanding the urine remained albuminous.

A case analogous to this, in which the history was that of a rupture, though the disease was apparently hydrocele, is related by Mr. Pott.

Case 11.—*Congenital scrotal epiplocele with hydrocele of the sac.*—A young fellow, about 25 years of age, applied to me on account of a swelling in his scrotum. It was large, of an irregular figure, not very tense, perfectly indolent, and accompanied with a remarkable fulness of the spermatic process.

The account which he gave of himself was, that he had had a rupture as long as he could remember; that he had, on that account, worn a steel truss for many years; that upon taking his truss off his rupture always came down immediately, and was very easily returned up again; that it had never occasioned any obstruction

in his stools, nor given him any pain; that about a year ago he had been persuaded to leave his truss off, and to substitute in its place a bandage made of dimity, without any iron in it, but which had been buckled on very tight; that when he had worn this bandage about six months, he found that his rupture was down, and that he could not get it up again; that, upon this, he had applied to the person of whom he bought the bandage, who, after he had ineffectually tried to reduce the rupture, sold him another bandage, and buckling it on still tighter than the first, assured him that it would never do him any harm; that from the time of putting on this second, his scrotum had gradually become larger, with considerable pain and uneasiness.

From the feel of the lower part, I made no doubt that the tumour contained a considerable quantity of fluid; and had there been no other circumstance to influence my judgment I should have supposed the disease to have been a hydrocele of the tunica-vaginalis testis; but the very distinct and particular account which the man gave of himself, and the feel and the appearance of the spermatic process, made me hesitate.

Whatever might be the true nature of the case a fluid there certainly was, and that in quantity sufficient to render the discharge of it both safe and warrantable. I made a puncture in the middle and anterior part, and let out above a pint of brown serum. This discharge removed all the swelling from below, but made little or no alteration, either in the look or the feel of the upper part of the process. I endeavoured to reduce it, but

found it impracticable, and desisted, advising the man to let it alone, to wear no bandage of any kind, and if at any future time it became troublesome to him, I desired that I might see it.

In about a year's time he came to me again, with his scrotum as big as before, and palpably containing a fluid.

As I had felt the testicle very plainly after the first operation, and as I did not believe the tumour in the process to be formed by the intestine, I advised him to have the whole laid open. He submitted, and I took him into the hospital for that purpose. I made an incision from the middle and anterior part of the scrotum, quite up to the groin, and found in the lower part of the bag, which contained the fluid, the testicle covered only by its proper coat, or tunica albuginea, and in the upper part, or neck of the same bag, a considerable portion of omentum. The upper part of this portion of caul was hardened in its texture, and so perfectly adherent to every point of the neck of the sac, as to prohibit the return of even a fluid from thence into the belly; but the lower part was in its natural state, loose, soft, and capable of being expanded. All the lower or loose part I cut off without making a ligature, or being troubled with any hæmorrhage; the upper part I left as I found it, filled the wound lightly with dry lint, and treated the case as I should have done that of a radical cure for an hydrocele. In about seven weeks the man got well, and has remained so ever since.*

* 'Pott's Works,' vol. ii, p. 374.

CHAPTER IV.

ON THE CONDITIONS OF HERNIA.

Herniæ, whether simple or complicated, are met with under the four following conditions: first, as reducible swellings; secondly, as irreducible; thirdly, as partly reducible and partly irreducible; and, fourthly, as strangulated.

Strictly speaking, the term irreducible should be confined to those herniæ which have undergone such alterations, either by enlargement or adhesions, subsequent to their descent, as to render their reduction impossible; while a reducible hernia implies one that can at all times be readily replaced. Not unfrequently, however, the latter become for a longer or shorter period incapable of reduction; or a hernia may take place suddenly, and for the first time, and become at once irreducible, perhaps, for several hours, days, or even weeks; for the two latter classes of cases I shall use the term temporary irreducible herniæ.

Section 1.—*On the reducible Hernia.*

A reducible rupture is known by the variable size of the swelling, its diminution or disappearance when the

patient lies down, its reappearance when he stands up or coughs, its continued suppression as long as pressure is made over its aperture of exit, its re-descent when the pressure is removed and the patient is erect, the distending impulse communicated to the hand placed on the tumour when the patient coughs or strains, the peculiar character and feel of the swelling—more or less elastic or doughy, but not fluctuating—the gurgling noise which often attends its re-entrance into the abdominal cavity, the sudden flop with which it slips in at the last, and the being able to feel the aperture through which it passed out.

These symptoms, which characterise reducible herniæ generally, vary slightly according to the nature of the sac contents; thus, "if the surface of the tumour be uniform; if it be elastic to the touch; if it become tense and enlarged when the patient is troubled with wind, holds his breath, or coughs; if in the latter case it feel as if it were inflated; if the part return with a peculiar noise, and pass through the opening at once, the contents of the swelling are intestine. If the tumour be compressible; if it feel flabby and uneven on the surface; if it be free from tension under the circumstances just enumerated; if it return without a noise, and pass up gradually, the case may be considered an epiplocele—if a portion of the contents slip up quickly, and with noise, leaving behind something which is less easily reduced, the case is probably an entero-epiplocele."* Bearing in mind then the varying size and the reducible character

* Lawrence, op. cit., p. 50.

of these herniæ, there are but few other tumours which can be confounded with them. Enlarged glands and other solid tumours, retained or diseased testis, ordinary vaginal hydrocele and hæmatocele, and hydrocele of the spermatic cord, cysts and most abscesses, may be dismissed from consideration on account of their irreducibility; while certain abscesses, varicocele, varicose enlargement of the femoral vein, hydrocele of the vaginal and of the funicular portions of peritoneum, owing to their partial or complete disappearance on pressure or in the recumbent position, bear some resemblance to them.

The abscesses which are most liable to be mistaken for hernia are certain psoas and intra-pelvic collections of matter, for, being partly within the abdominal cavity, they are subject to varying degrees of compression by the viscera, and corresponding variations in the size and tension of the portion which is visible; they have also a distending impulse communicated to them on coughing, and may be made partly to disappear on recumbency and on pressure; nevertheless the incompleteness of this disappearance, the fluctuation of the swelling, and the dulness on percussion, are so many circumstances sufficient to distinguish them from hernia. Varicocele may be known by the "bag of worms" feel of the tumour, its situation behind and above the testicle, the slow and incomplete emptying of the distended veins on recumbency, the imperfect disappearance of the tumour under these circumstances, and the return to its original size when the patient stands up, notwithstanding pressure be made over the external abdominal ring. Varicose

enlargement of the femoral vein, at the point where it is joined by the saphena, so far resembles a redueible femoral rupture that it disappears when the patient lies down, re-appears on his standing up, and inereases in size when he eoughs or exerts himself; but as the tumour is merely a part of a general varieose eondition of the veins of the limb, attention to this cireumstanee will reveal its true nature. Hydrocele of the vaginal and of the funieular portions of peritoneum gives rise to translueent fluetuating tumours, the fluid of whieh may be made to flow baek into the peritoneal eavity, but does not re-enter it with the peeuliar sudden flop so eharaeteristie of enteroeele. If pressure be made over the internal ring, or if the forefinger be earried into the inguinal eanal while the patient is reeumbent, and he then be told to rise, a hernia will not deseend, the fluid will.

As the radieal eure of redueible hernia will eome under eonsideration at the latter part of this work, I shall only remark here that a well-fitting truss, the spring of whieh is just strong enough to keep up the protrusion in the various postures of the body, is undoubtedly the simplest remedy. Under eertain eircumstances, however, whieh will be eonsidered hereafter, it will be more advisable to attempt the radieal eure. I shall now pass to the eonsideration of the permanently irredueible ruptures.

Section 2.—*Permanent irreducible Hernia.*

The diagnosis of a permanently irreducible hernia is rarely doubtful, except in the absence of any history of the swelling; far more likely and much more common is it for other tumours to be mistaken for hernia, than the latter for the former; nevertheless, instances are not wanting, in which with a clear history of rupture, the characters of the tumour have been such as to raise doubts in the minds of even experienced surgeons. Amongst the causes of this obscurity must be reckoned the small size of the tumour, the alteration of its character from condensation, the accumulation of fluid within the sac; or the co-existence of other diseases, as those of the testicle and cord. The greater number of irreducible ruptures are omental, between which and the neck of the sac such firm adhesions may take place as to cut off completely the cavity of the latter from that of the peritoneum: in this condition of things fluid sometimes accumulates in the hernial sac, as already seen in Chapter III, Cases 10 and 11. Ruptures of a less equivocal character than those just narrated have sometimes been mistaken for hydrocele, as in the following lamentable case:—

Case 12.—*Scrotal enterocele mistaken for hydrocele, and punctured and injected.*—J. C., aged 43, was admitted into the Hospital in 1856, with a large scrotal tumour. He complained of having some pain in it, said his bowels had not been opened for three or four days, and that he had had vomiting. His face was pale; his pulse 120, and feeble.

Two strips of plaster, placed X in front of the scrotum, concealed a puncture which had been made by a surgeon prior to his admission. Some fluid, he says, came away, and some dark-coloured liquid was afterwards injected. He died thirteen hours after his admission, gradually exhausted by repeated vomiting. The post-mortem examination revealed a perfectly healthy condition of all the viscera, except those within the hernial sac. This contained the cæcum, and from two to three feet of the lower end of the ilium, glued together and to the walls of the sac by recent lymph; this likewise covered the whole of the inner surface of the sac, but did not extend to the abdominal peritoneum. No portion of the bowel which formed the hernia was in any way constricted, nor had it any marks of strangulation, nor had it given way at any part. In fact it was obvious to all present, that the poor fellow had died from the effects of injecting tincture of iodine into his hernial pouch under the supposition that it was hydrocele. Had illumination or percussion of the tumour been resorted to, such an error as this could scarcely have been committed.

The following extract from my lecture on this subject bears on the above case.

"Hydrocele is so common and so simple a disease, that it is usually one of the first that a student learns to diagnose, and the fluctuation and translucency of the swelling, its pyriform shape, and its commencing at the bottom and not at the top of the scrotum, are at once pathognomonic of the affection. But this *ensemble* of symptoms is not always present, nor are they always unequivocal;

the patient's evidence, for example, as to whether the swelling began at the bottom or the top of the scrotum, cannot always be relied on. The fluctuation, likewise, may be simulated by certain solid tumours, or may be so obscure as to afford us little aid in diagnosis; even the translucency is not invariably present, nor, when present, is it always indicative of fluid. A thickened condition of the tunica vaginalis, or the dark colour of the contained fluid, may interfere with the transmission of light; while a knuckle of intestine may be so distended with flatus, and the skin of the scrotum so thin, as readily to transmit it. Arnaud and Teale both relate cases of scrotal enterocele which, from these causes, were as translucent as an ordinary hydrocele. But there is another source of fallacy: if the hydrocele be so large as to extend into the inguinal canal, not only will it resemble a hernia in shape, but it will also have an impulse communicated to it on coughing, because the part within the canal will be compressed between the abdominal muscles. A hydrocele then, may be so large as to resemble a hernia in its shape, and in having an impulse communicated to it on coughing; its coats may be so thick and so tense, as not to transmit light nor to fluctuate; while its history may be so doubtful as not to be depended on. None of the symptoms of hydrocele, then, which are usually enumerated, are in every case so unequivocal as to be absolutely pathognomonic of the disease; but there is one other sign which, taken in conjunction with those already mentioned, renders its diagnosis certain, and that is, dulness on percussion.

Under certain circumstances an irreducible hernia may bear some resemblance to an abscess, as in the following case :—

Case 13.—*Large strangulated hernia bearing some resemblance to an abscess.*—A female, 46 years of age, was sent into the Westminster Hospital from the country, with a large tumour in the right groin; the skin over it and around it was discoloured, having a bruised and ecchymosed appearance, as if the tumour had received a severe blow, or been roughly manipulated. This discoloration, together with its great size, and the absence of any definite history, led the surgeons who saw it to doubt whether it were a hernia, and one of them inclined to the opinion that it was an abscess. However, as the bowels had not acted for three days, it was determined to make an exploratory incision into it. Extravasated blood escaped from the incision, and on cutting deeper, the sac of a large hernia was opened, from which escaped a dirty, bloody, stinking fluid, revealing two large knuckles of distended ileum, partly gangrenous. The patient only survived the operation about six hours. Now, I have related this case simply for the purpose of illustrating the fact that a hernia may so far resemble an abscess as to lead even experienced surgeons to be doubtful of its nature.

Exceptional cases are occasionally met with in which such an error of diagnosis is excusable, as in the following, related by Mr. Shaw at the Pathological Society, and published in their transactions for 1847-48, p. 270.

Case 14.—*Scrotal entero-epiplocele mistaken for diseased testis.*—"In the end of July, 1845, a man, advanced in years, was admitted under the care of Mr. Shaw, into the Middlesex Hospital, for what was supposed to be a disease of the right testicle. There was an irregular swelling of the scrotum, with enlargement of the cord; but owing to the thickened condition of the skin and cellular membrane, the testis could not be felt, and the nature of the tumour could not be ascertained by the touch. The history given by the patient was so obscure that it threw no light upon the case. In a short time, phlegmonous inflammation took place in distinct parts of the swelling, and a succession of small abscesses formed at the lower part, which ended in becoming sinuses. The matter discharged at first was healthy pus, but soon became sanious and highly offensive, afterwards it was frequently of a pale orange colour. The quantity of discharge, which was always profuse, sometimes increased greatly, without any corresponding change in the condition of the tumour. It was at one time thought that the tumour might be hydrocele, in which the walls were dense and gristly, and that these might have sloughed. The view was also entertained that a communication might exist between the sinuses and the intestinal canal; the fetid smell of the discharge, and the variation in its quantity at different periods, favoured that opinion; but there was no derangement in the action of the bowels, or pus in the stools; and although the yellow colour of the discharge might be owing to a mixture of bile, nothing like feculent matter was ever observed. At the end of a

year the patient died exhausted. On examination, the case was found to be one of hernia ; the sac was occupied principally by omentum, condensed, and adhering to the parietes ; but enveloped in the omentum was the appendix vermiformis, healthy in structure all the way down to near its blind extremity ; at about half an inch from this point the coats were destroyed by ulceration, and a communication existed between its interior and the sinuses of the scrotum. The cæcum was situated a little lower down in the iliac fossa than usual, but it was of natural shape, and healthy in structure. It could not be doubted that the sinuses had been caused by the escape of matter into the hernial sac, and afterwards into the cellular membrane of the scrotum, from the ulcerated opening in the appendix vermiformis, and that the profuse discharge had come principally from the bowels."

As a pendant to this case, and also in illustration of some of the difficulties which occasionally beset the diagnosis of scrotal tumours, the following may be given.

Case 15.—*Congenital scrotal epiplocele with orchitis and hydrocele.*—J. S., aged 54, was admitted into Henry Hoare Ward, on the morning of the 8th of October, 1859, for a supposed strangulated hernia. A large, tense, and slightly red swelling, which was somewhat tender on pressure, occupied the scrotum and inguinal canal on the right side ; the bowels had not acted for two days, and there had been slight sickness the day preceding, and also on the morning of his admission. The patient stated that he had been ruptured since the

age of 14, but had worn no truss till after the age of 30, when, on raising a heavy weight, the rupture suddenly increased in size, and was returned with difficulty; since then he had constantly worn one. A few days before admission, the swelling became much larger than usual, which the patient attributed to having over-exerted himself in raising timber. There could be no doubt of the existence of a rupture in this case, and it was now irreducible and evidently inflamed; but, as there was no constitutional disturbance, and the symptoms were not urgent, I determined to wait awhile before operating, apply ice to the tumour, and watch the case. The patient had no sickness after his admission, and on the same evening his bowels acted spontaneously. The subsequent history of this case is not less instructive, and is as follows:—After the subsidence of the more acute inflammatory symptoms, the scrotum was found to contain a considerable quantity of fluid, in addition to the solid mass which before and now occupied its cavity; and on the 5th of November I punctured it, and drew off six ounces of a clear, straw-coloured fluid. On the 16th of the same month, the operation was repeated, the fluid this time amounting to ten ounces four drachms, similar in appearance to the last, and containing some fibrin and much albumen, with a small quantity of bile. I was now enabled, for the first time, to make a satisfactory examination of the solid portion of the swelling. It was oblong in shape, reaching to the bottom of the scrotum below, and into the inguinal canal above; it was uniformly hard throughout, and the lower part could be

distinctly recognised as the testicle, though neither the epididymis nor spermatic cord could be felt. The upper part of the tumour was obviously omentum, but it could not be separated from the testicle, nor did it yield to attempts at reduction. A week after the last tapping, the scrotum was as distended as ever; I therefore decided, instead of again letting out the fluid, to rub in the dilute mercurial ointment for ten minutes night and morning, with the view of acting on the solid contents of the scrotum, and on the 29th the whole tumour had sensibly diminished, both as regards the quantity of fluid and the size of the solid portion. On December the 10th the note is—"The whole of the fluid has been absorbed, but the body of the testis continues very large and hard. The epididymis cannot be distinctly made out, and appears to be blended with the hard substance (omentum) which occupies the upper part of the scrotum and inguinal canal." The friction with the mercurial ointment was continued daily till the patient's discharge on the 24th, when the following note was made:—"The testis is now smaller and softer than the patient ever remembers it to have been. The epididymis can be felt distinctly, and also the cord; an omental hernia, quite soft, occupies the upper part of the scrotum and inguinal canal, and is apparently adherent to the globus major and the testis."

The interpretation of the symptoms which characterised this case, is probably the following:—The man had been for many years the subject of an irreducible congenital epiplocele, and had worn a truss for it; the

pressure of the pad of this instrument upon the upper part of the hernia, must have impeded the return of venous blood from that portion which occupied the scrotum, and also from the testicle, producing therefore chronic congestion and some enlargement of these parts. This being the ordinary condition of things, inflammation is set up in the tumour, followed by a great increase of its size and a commensurate increase of constriction of its upper part; the effect of this would be to impede still further the return of venous blood from the scrotal portion of the tumour, and hence give rise to passive effusion into the vaginal sac, or, in other words, to hydrocele; thus we had a hernia, orchitis, and hydrocele combined.

Before passing to the consideration of the temporary irreducible hernia, let us consider the treatment generally applicable to the permanent variety. There can be no doubt that the majority of these require nothing but to be let alone; no pad of a truss or even a bandage should be allowed to make pressure on them; they should be simply supported, and protected from injury by a bag truss, when they are complete, or by a hollow padded one when incomplete; if, however, they occasion inconvenience of so serious a character as to interfere materially with the patient's comfort or prospects, operative interference may be advisable, as exemplified in cases 4, 10, and 11. So also in cases such as that of the celebrated Zimmerman, where the omentum adhered by a single filament to the testicle, so that when the former was replaced the latter ascended with it, and

experienced painful pressure from the ring; while if the parts were allowed to protrude again a portion of intestine generally followed, was pressed on by the ring, and occasioned a fear of strangulation.

Again, in a case published by Macfarlane,* the dragging sensations in the epigastrium, and the vomiting and constipation, increased to such a degree during pregnancy, as to necessitate a constantly recumbent position, with the trunk bent forwards and the thighs drawn up to the abdomen. Under such circumstances no surgeon I imagine would hesitate about the propriety of relieving the patient by an operation.

Besides the permanent inconveniences just named, these irreducible herniæ are obnoxious to the same accidents as, and indeed more so than, the reducible; they may at any time be obstructed, inflamed, or even strangulated; in either of which events the same treatment is called for as is applicable to a similar state of things when occurring in any other form of hernia, and which will be gone into more fully by and bye.

Section 3.—*On Hernia, partly reducible and partly irreducible.*

It is by no means uncommon to meet with herniæ which are only partly reducible, the omentum being the portion which is usually adherent, while the intestine remains free from adhesions. A tumour thus constituted

* 'Med.-Chir. Trans.,' vol. xvi, p. 254.

never disappears entirely, as does the reducible rupture, and it is wanting in the uniformity of outline and size which distinguishes the irreducible rupture; hence, a tumour of varying size and consistency, sometimes more or less elastic, and sometimes wanting in elasticity; sometimes more or less resonant, and sometimes dull on percussion, are its characteristics, and serve to distinguish it, not only from other forms of hernia, but from tumours of a different nature. The proper treatment of these cases consists in the wearing of a truss, whose spring is sufficiently strong to keep up the bowel, without making so much pressure on the neck of the sac and contained omentum, as to give rise to congestion and the effusion of fluid. A patient thus afflicted should be very careful in his habits, as his rupture is more liable to become strangulated than are the other forms alluded to.

Section 4.—*On the temporary irreducible Hernia.*

A hernia which usually is easily replaced within the abdominal cavity may become, from a variety of causes, temporarily irreducible; or it may make its appearance suddenly and for the first time, and become then and there irreducible. Amongst the causes rendering an old hernia temporarily irreducible, may be reckoned the over-distension of the protruded bowel by solid, fluid, or gaseous matters; the increase in size of the sac contents from congestion or inflammation; or the sudden addition of a fresh protrusion to that already existing; while recent

herniæ, occurring at the moment of some violent exertion, are forcibly extended from their natural cavity, into a narrow space too small for their reception, and are at once subjected to a constriction, which not unfrequently amounts to absolute strangulation, and is nearly always sufficient to prevent their immediate reduction. The symptoms to which a temporary irreducible rupture gives rise, vary greatly, according to the circumstances of its occurrence; there may be none, save the persistence of a tumour which heretofore could be made to disappear upon pressure; or there may be every shade of disorder, from slight flatulence and anorexia, to well-marked symptoms of strangulation; hence no little discrimination is often required, to determine the necessity of an operation. If the symptoms of strangulation are unequivocal and persistent, under the treatment to be mentioned presently, and the taxis, under chloroform, has failed to reduce the protrusion, it cannot be undertaken too early; if they are equivocal, it is pretty certain that the obstruction is incomplete, and no harm can result from delay. The rule to be followed is simple, namely, not to use the knife unless under the conditions just stated; for want of attention to this, I have seen many unnecessary operations performed, and two with disastrous results. Hence, I have ever made it a practice never to operate on mere hearsay evidence or report, but in all doubtful cases, have waited till personally convinced of the reality of the strangulation, and that it cannot be overcome by other means; and I have never yet had occasion to regret this delay. It is extraordinary

how some practitioners confound mere irreducibility with strangulation.

Case 16.—*Large scrotal rupture temporarily irreducible and supposed to be ruptured.*—I was called up one morning, between 12 and 1 o'clock, to what I was told was an urgent case of strangulated hernia, and requested to bring my instruments with me. I found a tolerably large scrotal rupture; it was tense, and somewhat sensitive to handling, and attended with a sensation of dragging in the abdomen. The patient had been the subject of hernia for many years, but had always been able to reduce it till about fourteen hours before I saw him; from this time, all the efforts both of himself and his surgeon had proved unavailing. I put him under chloroform, and tried the taxis for about fifteen minutes, but was not successful in returning the rupture. I declined, however, to operate, because there were really no symptoms of strangulation present; the hernia was for the time irreducible, but it was not strangulated; a pill of two grains of opium was, therefore, prescribed, and ice was directed to be applied to the tumour. Before 8 o'clock the next morning, the hernia had gone back of its own accord.

So likewise in the following case, which was treated as if strangulated.

Case 17.—*Scrotal rupture temporarily irreducible.*—A labouring man, 60 years of age, the subject of chronic bronchitis, and who for six years had had a double inguinal reducible rupture, awoke one morn-

ing in some pain, from the right hernia having descended during the night and become irreducible. The parish doctor having been sent for, tried the taxis for nearly an hour, but failed in returning the protrusion. The same afternoon the patient was seen by a young surgeon, who had him placed in a warm bath and again attempted reduction, but with no better success; after that, an enema of warm water and castor-oil was administered, and ice applied to the tumour; but these means also failing, and the young surgeon, who had now taken the principal charge of the case, becoming alarmed, a young hospital surgeon was sent for, who, notwithstanding there were no symptoms of strangulation, forthwith cut down upon the tumour, and returned the bowel. Six days after the operation, both herniæ having again descended, I was consulted as to the propriety of re-opening the wound, in order again to return the protrusion, and with some difficulty succeeded in convincing this enterprising young surgeon that, as there was really no strangulation, another operation might be safely dispensed with.

This practice of operating in recent irreducible herniæ I am afraid is not confined to very young men. Some years ago I was witness to this proceeding by one of the most eminent surgeons of his day, although there was not a single symptom of strangulation, except irreducibility (see case 7, p. 27).

How long, it may be asked, may a hernia be left in this condition without necessitating an operation for its relief, or how long may it continue in this state without becoming permanently irreducible? To the first of these

questions I answer; as long as there are no other symptoms present but the tumour, which may then be treated according to the indications in each case—elastic pressure in one, ice in another, leeches and fomentations in a third, and so on. How long a hernia may remain down without becoming permanently irreducible, is a question to which I cannot give any certain reply. I have met with cases, and others are recorded by writers on hernia, in which several weeks, and even months have elapsed before reduction took place, as in the following.

Case 18.—*Hernia irreducible for several months, with fluid in the sac.*—S. T—, æt. 63, was admitted into the Westminster Hospital, under my care, on the 20th of January 1865, with a hard, tense, somewhat tender swelling, in the right groin. It was stated to have appeared suddenly, three days before, after a long walk, and "doubled him up" with pain, and brought on vomiting; but these symptoms gradually declined, and on his admission, nothing ailed him save this hard, irreducible tumour, which proved to be a femoral hernia, consisting apparently, of hardened omentum with fluid in the sac; for there was fluctuation and dulness on percussion. The taxis having failed to reduce it, the patient was ordered to remain in bed; he was placed on low diet, and ice was applied to the tumour.

February 4th.—The above treatment having been persevered in till to-day, without obvious alteration in the size or character of the swelling, it was punctured, and some clear straw-coloured fluid let out, after which

the taxis was again used, but unsuccessfully. Omit ice. H. Senna Comp. ℥j o. m.

14th.—Was placed under chloroform, the tumour again punctured, and the same kind of fluid evacuated as on the 4th, the taxis still failing to return the protrusion.

21st.—The fluid had re-collected and the tumour was as large as before; but the patient, feeling no ill effects from it, was discharged at his own request.

In the month of May, this patient applied to the hospital for a truss, the tumour having entirely and spontaneously disappeared.

Case 19.—*Inflamed Hernia irreducible for one month, with fluid in the sac.*—R. B—, æt. 30, a healthy, fresh-coloured young man, was admitted into the Westminster Hospital on the 19th of June, 1865, with an oblique inguinal hernia of the left side, which he had had for seven years, and for which he had always worn a truss till three months ago; he then left it off, and the hernia did not descend till two days before his admission, when it passed down into the upper part of the scrotum, and could not be returned. There were no other symptoms. The taxis having failed to reduce the rupture, the patient was confined to bed, put upon low diet, and ice applied to the tumour.

24th.—The ice has been continuously applied, but the swelling is much larger and harder, and somewhat tender; the ice was, therefore, ordered to be removed from the swelling.

26th.—The swelling is now very large, red, and

tender, and occupies the whole of the left side of the scrotum. Six leeches and fomentations were ordered, with the following mixture:—Magn. Sulph. ʒiij, Tr. Assafœtida ♏v, mist. Camph. ℥j ter.

27th.—The leeches bled well, and the mixture has acted freely on the bowels; but there is no appreciable alteration in the condition of the tumour. A linseed-meal poultice to be applied.

It is unnecessary to continue the notes, but it is sufficient to observe, that under the above treatment the hardness gradually subsided, and was replaced by fluctuation. The fluid subsequently became absorbed, and on July the 19th the hernia had gone back; the testis, epidydimis, and cord, could be well made out, and nothing but the thickened sac of the hernia remained. He was discharged well on the 22nd.

In the following, the hernia remained irreducible only for two weeks, and was unaccompanied by any symptoms from the beginning. The case also, is a good illustration of hernia into the funicular process of peritoneum, and of the masking effects of fluid on the real nature of the tumour.

Case 20.—*Entero-epiplocele into the funicular process, with much fluid in the sac; irreducible for two weeks.*—R. F—, æt. 34, a healthy-looking man, was admitted into the Westminster Hospital on November 12th, 1864, under the care of my colleague, Mr. Brook, for a supposed strangulated hernia. A large oblong swelling occupied the right inguinal canal and upper part of the

scrotum; it had appeared suddenly, thirteen or fourteen years ago, during a fit of coughing. The patient hitherto had always been able to return it, and for the last seven years had worn a truss; and it was while coughing, that it escaped from beneath the pad of the truss on the present occasion, and could not be returned.

Although there were no symptoms of strangulation, and no pain in the tumour, the house surgeon thought it right to attempt its reduction; and the patient was accordingly placed in a warm bath, and the taxis employed. The above means, together with the subsequent application of ice, not having succeeded in reducing the rupture, on the 16th, I was asked to see the patient. I found a tumour moderately tense, elastic, fluctuating, dull on percussion, and free from pain on handling. On inserting the end of the finger into the external abdominal ring, the outer margin of the latter was obscured by the hernia, but the inner was distinctly defined. On coughing, a distinct impulse was communicated to the finger inserted.

On the 20th, ice having been constantly applied in the interim, the swelling was visibly less from the absorption of the fluid; while the solid portion, consisting apparently both of omentum and bowel, could be distinctly recognised.

On the 25th, after some ineffectual efforts on the part of the house-surgeon to return the rupture, the patient himself succeeded, the hernia going back with a flop.

When a temporary irreducible hernia is accompanied with symptoms of strangulation, especially if there be much tenderness or tension of the tumour, I question

the propriety of employing the taxis at all in the first instance; simple rest in bed, ice, or what in the majority of cases affords most comfort, a large linseed-meal poultice to the part, abstinence from food, which is always loathed, and if taken would be rejected, abstinence from fluids, which though craved for, the stomach will not tolerate, one grain of opium or half a grain of morphia in a small pill, washed down by a tablespoonful of iced brandy and water every three or four hours, suffice, in a large proportion of cases, to procure the spontaneous reduction of a rupture, which treated by manipulations, purgatives, and copious drinks, would have necessitated an operation for its relief. Again, if under the above means, symptoms of strangulation should continue, the patient is in no worse condition for an operation than he was at first; for it is the peculiar merit of the practice here inculcated, that although the obstruction may have been invincible from the beginning, it has remained stationary, and has not progressed from incarceration with mere intestinal obstruction, to strangulation with mortification, or ulceration of the bowel. In the following cases the advantage of the principles here advocated is well seen.

Case 21. — *Congenital hernia into the funicular process, occurring suddenly, with symptoms of acute strangulation.*—G. P., æt. 20 (labourer), a dark-complexioned, healthy young man, was admitted into the Westminster Hospital under my care, about 10 a.m. of the 19th of October, 1868, with all the symptoms of

strangulated hernia. He was pale, doubled up or stooping, and complained of great pain in the abdomen, of a dragging character, chiefly in the umbilical and left hypochondriac regions; his pulse was small and feeble, his countenance anxious and expressive of pain; he felt sick, and had vomited three times on his way to the hospital. A recent protrusion filled up the right inguinal canal and the two upper thirds of the scrotum, the testicle being felt immediately below the tumour. The latter was tense and impatient of pressure.

History.—Never having had a rupture before, between 8 and 9 o'clock on the morning of his admission, he was engaged in the Caledonian Road in lifting sacks of oats into a bin, and, by way of bravado, was testing his strength against that of another young man, when he felt a sudden pain, and something give way in the right inguinal region. He was at once rendered incapable of further work, but was, nevertheless, able to walk to the hospital, a distance of at least two miles, vomiting, as already stated, on his way thither. I saw him almost immediately after his admission, and on his being undressed and put to bed, I had his head lowered and pillows placed under the buttocks, so as to raise the pelvis, and thus call in the aid of gravitation while I tried the taxis. After persevering for about fifteen minutes, during which he had another severe and prolonged attack of vomiting, which obliged me to desist, I thought it prudent to abandon further attempts at reduction. A large hot linseed meal poultice was now placed over the groin and scrotum, and 1 grain of solid

opium given in the form of pill, to be repeated every three hours if necessary.

1.30 p.m.—There has been no return of the vomiting, but the pain persists; the face is flushed, the skin hot, the tongue dryish. Pt. Pil. et Catap.

4.30 p.m.—No more vomiting, face still flushed. Is asleep.

10.30 p.m.—No sickness, and abdominal pain less severe; abdomen bears pressure well. Tumour was not touched, but has undergone no diminution of size. Pt.

20th, 10.30 a.m.—The tumour has disappeared, and with it all the symptoms. Made a hearty breakfast of milk and bread and butter, and complains only of being hungry. (Took only three of the pills.)

Case 22.—Scrotal hernia with symptoms of strangulation.—G. D., æt. 36, a healthy-looking labourer, was admitted into the Westminster Hospital on Friday November 12th, 1869, at 11 a.m., with symptoms of strangulated hernia. A reducible bubonocele occupied the left inguinal canal, while an irreducible scrotal rupture existed on the right side. I saw the patient about 2 p.m., and obtained the following history. The rupture on the right side, had existed ever since he was fourteen years of age; but that on the left, had only recently made its appearance. On several occasions he has had considerable difficulty in reducing the complete hernia; but had always eventually succeeded, by standing on his head against a wall, and manipulating it while in that position. On Tuesday morning last, it again became

imprisoned; but the means just described failed on the present occasion. Under these circumstances, he took a strong aperient pill, after which he began to feel sick and vomited, and no solid food would remain on his stomach. On the same evening, the pill not having acted, he took some castor oil, which also failed to relieve the bowels, and increased the sickness which has continued ever since, and no solid food has been taken since Monday night, only small quantities of tea being tolerated: he complained also of a pain in the tumour. On admission, the house-surgeon had him placed in a warm bath, and tried the taxis for half an hour without success; he then ordered hot fomentations to the abdomen, and a draught containing 30 minims of the Liquor Opii sedativus; and when I saw the patient, there had been no recurrence of the sickness, and as there were no urgent symptoms, the fomentations were ordered to be continued, and half a grain of morphia to be given at 10 o'clock p.m. if necessary; but an hour before this time, the rupture had spontaneously gone back.

The note made next day was to the following effect:

"Had some uneasiness in the abdomen all last night, but at six o'clock this morning the bowels acted, since which he has been perfectly easy."

This case offers a good illustration of the injurious effects of purgatives in this condition of hernia, while the beneficial effects of sedatives, is no less strikingly seen.

Case 23.—*Large congenital scrotal hernia with symptoms of strangulation.*—L. L., æt. 21, horsekeeper, was

admitted into the Westminster Hospital under my care, on the 4th December, 1869, with the above. The hernia came down this morning, and was immediately followed by vomiting, constipation, and pain in the tumour and across the lower part of the abdomen; and he has been unable to take any food since. The tongue is moist and slightly furred, and the pulse rather feeble. The tumour measures nine and a half inches in length, from the bottom of the scrotum to the external abdominal ring; it is elastic, slightly tense, and obscurely resonant on percussion, and no impulse is communicated to it on coughing. He has had the hernia as long as he can recollect, but hitherto has always been able to return it, and till the last fortnight he had never worn a truss for it. This morning he removed the instrument, on account of some excoriation which it had produced in the opposite groin, when the rupture came down and he was unable to reduce it. I saw this patient on the afternoon of his admission, and finding that he had himself employed the taxis without avail, I made no attempts at reduction by this means, but simply ordered a grain of morphia to be taken immediately, and applied nothing to the tumour.

In the evening the patient went to sleep, but awoke at 3 a.m., and found the rupture had gone back. A few hours later the bowels acted, and when I saw him in the middle of the day there had been another action, his tongue was clean, his pulse good, and he complained only of hunger.

It is deserving of remark, that notwithstanding the

chief bulk of the tumour was composed of distended bowel, yet no impulse was communicated to it when the patient coughed—a fact which shows how tightly it was girt, and evidencing the great value of the plan of treatment here advocated, in overcoming these constrictions.

Cases very similar to these might be multiplied; but they are sufficient to illustrate the point on which I wish to insist, namely, the non-necessity, and therefore inexpediency and impropriety, of a surgical operation. *No cutting operation* ought to be undertaken for a recent irreducible hernia, unless the symptoms of strangulation are persistent, as well as unequivocal.

Section 5.—*On Strangulated Hernia.*

It is assumed that the reader is familiar with the symptoms and treatment of an ordinary strangulated hernia; yet instances are not wanting in which it has been mistaken for other tumours, as in the notable examples recorded by Lawrence, which are so apposite that I shall transcribe the paragraph entire, together with the comments of that illustrious surgeon.

"I have seen an hospital surgeon, a man of considerable practice and eminence in his profession, mistake a femoral hernia for a glandular enlargement, although the attendant symptoms sufficiently indicated the nature of the complaint. So strongly did the tumour in all its sensible characters resemble a swollen gland, that the operation was not performed, although the marks of

strangulation were present; and the patient's death afforded an opportunity of ascertaining that the complaint had been caused by a protrusion of the bowel. Sir A. Cooper informs us that a surgeon in considerable practice sent into Guy's Hospital a man with a crural hernia which had been poulticed for three days, on the supposition of its being a venereal bubo, and when the operation was performed, the intestine was found mortified. In another case the swelling was opened under a similar mistake; the stools were discharged at the opening, and the patient soon after died. Similar fatal errors are recorded by Petit. The importance of this subject, and the inevitably fatal consequences of a mistake, induce me to repeat what I have already observed, that the existence of symptoms justifies us in operating where the character of the tumour is doubtful. I will venture to add that if, in compliance with this maxim, the surgeon should, under any unusual concurrence of circumstances, cut down on a merely glandular swelling, he will be acquitted in the opinion of every judicious practitioner, and his conduct will not be attended with any injurious consequence to the patient; if, on the contrary, he persists in preferring the testimony of his touch to the dictates of his reason and judgment, and refuses to operate where the symptoms demand the use of the knife, he must be considered responsible for the death of the patient."*

I shall proceed now to the consideration of a very

* Op. cit., p. 493.

important class of cases, in which some or all the symptoms of strangulation are present, under the following conditions:—

1st. With an actually strangulated hernia; but the tumour so small, or occupying so unusual a site, as to escape detection.

2ndly. With a well-marked hernial tumour; but the symptoms of strangulation not due to the tumour.

3rdly. With a well-marked tumour, to which the symptoms are owing; but the tumour not a hernia.

4thly. Without any tumour, or any history of rupture; but from internal causes.

Under the first head, I would recall the reader's attention to the remarks on diagnosis in chapter I, section 2, in which the importance of position for the detection of small tumours is insisted upon and illustrated; it is also well he should understand that there may be no tumour whatever, a slight fulness being all that can be detected, and sometimes, especially in fat people and in females, even this may be wanting. The kind of herniæ most liable to be overlooked, are the small incomplete inguinal, the incomplete femoral, and the obturator. When, however, it is remembered, that to the general symptoms of strangulation there are always added more or less local pain and uneasiness, tenderness on pressure over the site of the protrusion, and a sensation to the fingers on palpation, sometimes of hardness, and sometimes of elasticity, which is not experienced in the corresponding part of the opposite side; if the testicle, moreover, occupies its normal position in the scrotum; I

say, if all these local signs are present at any of the above hernial outlets, even if there be no visible fulness, little doubt can be entertained that strangulation exists at that site. "These cases," as observed by Lawrence,* "more commonly fall under the care of the physician than the surgeon; for, as the patient himself is often not conscious of having a tumour of the groin, the symptoms of strangulation are ascribed to inflammation of the bowels, without a suspicion of the true cause having been excited, and the patient dies, as is supposed, of idiopathic peritonitis." "There is a preparation," he observes elsewhere, "in the museum of St. Bartholomew's Hospital, taken from the body of a person in whom the existence of a rupture had not been discovered during life, although the inguinal region had been carefully examined, as the symptoms were those of strangulated hernia. A bit of intestine, not larger than the tip of the finger, just projects under the lower edge of the obliquus internus and transversus; but the body of the swelling forms a prominence in the cavity of the abdomen nearly equal to the last joint of the thumb, and the stricture formed by the mouth of the sac is on the summit of this prominence, about an inch within the lower margin of the transversus."

Of the three varieties of hernia above named, the obturator, from the great depth at which it is seated, its small size, and its rarity, is the most likely to be overlooked, and the most difficult to diagnose; indeed,

* Op. cit., p. 223.

till a comparatively recent date, many surgeons questioned the possibility of its recognition during life, but since more attention has been directed to this form of hernia, much of the obscurity formerly attaching to it has vanished, and some of the symptoms are so marked and peculiar, that they can scarcely belong to any other affection. In the first place, the sac of an obturator hernia never exists ready formed, as in the congenital varieties of inguinal hernia, consequently strangulation can never take place (as so frequently happens in the latter,) on the first occurrence of a protrusion. There is always the history of previous intestinal derangement during the formation of the hernia, such as colicy pains, uneasiness at the upper and inner part of the thigh, and in many cases acute pain in the course of the obturator nerve, extending down the inside of the limb as far as the great toe. If, with this previous history, strangulation should take place, there would be superadded the local pain upon deep pressure at the upper and inner part of the thigh, and through the vagina or rectum, and sometimes the recognition of a distinct tumour. I shall subjoin a short extract of Mr. Obre's case, as being the first on record in which an operation was successfully performed for its relief.

Case 24.—*Strangulated obturator hernia successfully relieved by operation.*—Mrs. W., æt. 55, had suffered for three days from well-marked symptoms of strangulation when Mr. O. first saw her. "On uncovering the upper part of both thighs at the same time, the eye

detected a *slight degree* of fulness in Scarpa's triangle on the right side; this triangle of the opposite limb, was well marked with a hollow or depression passing down its centre, but this was lost on the affected side, and the whole contour of this part of the limb was visibly fuller than that of the corresponding; there was no tumour or circumscribed swelling, but on standing over the patient, and using firm pressure with the ends of the fingers over the neighbourhood of the femoral artery, and a little below the saphenous opening, a distinct hardness could be felt, giving an impression as if the sheath of the vessels were being pressed on." The patient denied having been the subject of rupture, but stated that she had felt some slight inconvenience and pain in the limb for the previous fortnight, so as to oblige her to rest the extremity. The action of the bowels had also been irregular for the same period. Mr. Obre cut down on the swelling, when, on dividing transversely the fibres of the pectineus muscle, and separating with his fingers some cellular tissue, a portion of intestine with its sac came into view, "firmly held down by the other muscular structures that surrounded it. On being liberated it suddenly ascended into the wound, being distended by flatus to the size of a pigeon's egg." He opened the sac, divided slightly the edge of the hernial orifice, and returned the blue and congested intestine. The patient made a good recovery.*

* A case in which the above practice was not pursued, although the nature of the hernia was suspected is published in vol. xvii, of the 'Path. Soc. Trans.,' p. 132.

Should there co-exist with a strangulated obturator hernia, another variety of rupture, the former is still more likely to be overlooked and the symptoms attributed to the latter. An instructive example of this is published in the 'Trans. of Path. Soc.,' Vol. I, p. 100, by Mr. Prescott Hewett, which I here extract.

Case 25.—*Strangulated obturator hernia combined with an oblique inguinal—the former undiscovered during life.*—The patient, aged 67, was admitted into St. George's Hospital with symptoms of strangulated hernia. She stated that she had suffered from hernia in the left groin for the last seven years, and that she had been in the habit of wearing a truss. Four days previous to her admission, the gut had slipped down behind the truss, which was followed by intense pain in the abdomen; she, however, succeeded in reducing a portion of the tumour, which was of the size of a pigeon's egg, and the following day a surgeon reduced the remaining portion of it. On her admission into the hospital no tumour could be felt in the left groin, but she was in a very low state. Stercoraceous vomiting, hiccough, &c., were present, but without pain or tenderness in any part of the abdomen. Injections, and calomel and opium, were administered without any relief; and as a small swelling was obscurely felt in the left groin on the following day, an incision was made in this region, and a small hard tumour was laid bare, situated close to the external abdominal ring, which was large and quite free. The symptoms went on increasing, and the patient died on the second day after her admission.

On examining the body, an old hernial sac, of the size of a small walnut, was found in the left groin. This sac, which was quite empty and flaccid, was traced through the external ring into the abdomen, where its opening into the peritoneum would scarcely admit of the passage of a quill. The convolutions of the small intestine were of a dark colour, but no inflammatory effusion existed in any part of the peritoneum. After a careful examination, a knuckle of small intestine was found passing through the left obturator foramen, where it was tightly fixed; the gut was, however, withdrawn from its situation, when two thirds of its diameter were found to have been strangulated, producing an appearance resembling that of a diverticulum. The strangulated portion of gut was healthy in structure, but of a dark livid colour; it was of the size of a large walnut, and situated to the inner side of the obturator nerve and vessels, a large branch of the artery partly encircling its neck. The whole of this hernial sac was situated beneath the obturator externus muscle, between it and the ligament, the fibres of the muscle being expanded over the surface of the sac. Its point of communication with the cavity of the peritoneum easily admitted the tip of the forefinger.

An analogous case, in which an obturator hernia was combined with a femoral epiplocele, and the latter operated on, is also recorded by Mr. Stanley in the same Transactions.*

* See No. 5, p. 94; also No. 6, p. 357.

2. *Symptoms of strangulated hernia, or closely resembling them, may co-exist with a well-marked hernial tumour, and yet these symptoms have no connexion with the tumour.*—Many examples of this kind are on record, and the case last quoted, in which there were two herniæ, but only one discovered during lifetime, and to which the symptoms were not owing, is a good illustration of the above; but there may be really only one hernia with symptoms of strangulation, although the latter have no connection with it; or, lastly, with a hernial tumour there may co-exist symptoms not due to strangulation, but somewhat resembling them. Of the combination of symptoms of obstruction with an old irreducible rupture which had no share in producing them, there are few more instructive examples than the following.

Case 26.—*Old irreducible entero-epiplocele, with symptoms of strangulation due to enteritis.*—"An old gentleman, who had for many years had an irreturnable rupture of the mixed kind, and which I had often seen, was seized with symptoms of an obstruction in the intestinal canal.

He complained of great pain in his whole belly, but particularly about his navel; he was hot and restless, and had a frequent inclination to vomit; his pulse was full, hard, and frequent; and he had gone, contrary to his usual custom, three days without a stool.

I examined his rupture very carefully; the process was large and full, as usual, but not at all tense or

painful upon being handled; his belly was much swollen and hard, and he could hardly bear the light pressure of a hand about his navel. Upon mature consideration of the whole, I was of opinion that his rupture had no share in his present complaints; but as some of his symptoms resembled those of a stricture, I desired that more advice might be had. A physician and surgeon were called. I gave them an account of what I had seen of the case, of my opinion concerning the irreducibility of the rupture, and that it had no share in the present complaint; at the same time desiring my colleague to examine for himself. He tried at reduction without success, but he thought that there was still a stricture. The doctor ordered bleeding, clysters, and cathartics; the last were immediately rejected by vomit, and the clyster came away without any mixture of fæces. Bleeding was repeated *ad deliquium*. The tobacco smoke was injected, but all to no purpose. The operation was proposed, but as the case did not appear to me to require it I could not second the motion; it was, however, mentioned to the patient, who would not consent unless I would say that I thought it necessary, and believed it would be successful. I could not say either, because I believed neither. Everything else that art could suggest or practise was tried, but on the sixth day he died.

As it had been supposed that I was wrong and positive, I was very glad that his friends chose to have him opened.

The hernial sac was thick and hard, and contained

a large portion of omentum, a piece of the ileum, and a portion of the colon, all perfectly sound, free from inflammation or stricture, and irreturnable only from quantity. But the intestine jejunum was greatly distended, highly inflamed, and in some parts sphacelated."*

The passage of renal or biliary calculi give rise to symptoms which bear some resemblance to strangulated hernia, and, when occurring in the subjects of rupture, might be mistaken for those of strangulation.

Case 27.—Double scrotal rupture, with symptoms of supposed strangulation, arising from the passage of gall stones.—A labourer, 57 years of age, who had been the subject of a double scrotal rupture for many years, accidentally broke his truss, and two days afterwards was seized, while at work, with a severe pain in the abdomen and scrotum, shooting through to the back, accompanied with flatulence, eructation, and vomiting. On the following day, June 17th, 1865, the symptoms still continuing, he was brought to the hospital and placed under my care for supposed strangulated hernia. On questioning him, however, it was ascertained that his bowels had acted freely and spontaneously the same morning, and on examining the scrotum, the herniæ were found free from all pain and tension, and completely reducible. From the condition of the herniæ, from the symptoms not being relieved by their reduction, from the character, the situation, and the severity of the pain, and from the sallow appearance of the

* Pott, op. cit., vol. iii, p. 330.

patient, I diagnosed gall stones, ordered a large sinapism over the abdomen, and half a grain of opium every three hours. On the following day the pain and vomiting had ceased, and the patient was unmistakeably jaundiced.

The sudden occurrence of the symptoms in this case, following closely on the breaking of the truss, were certainly calculated to throw a surgeon off his guard, and lead him to attribute them to strangulation of the rupture.

A parallel case to the above, but in which the symptoms were due to renal calculi, had been brought to my notice about seven months previously by my colleague Mr. Pearse, our then house-physician.

Case 28.—*A small recent umbilical hernia, with symptoms of strangulation, due to the passage of a renal calculus.*—A strong hearty labourer, 64 years of age, while engaged in lifting some heavy pieces of timber, November 1st, 1864, was seized suddenly with a severe pain in the abdomen, shooting across from one lumbar region to the other, followed by vomiting, and obliging him to leave off work. He was brought to the hospital at 4.45 p.m. of the same day, pale, cold, and collapsed, and had vomited several times after his seizure. The pain had now localised itself in the right loin, from which it descended to the right testicle, which was strongly retracted. Brandy and laudanum were at once given him, and a warm bath prepared, but as he was on the point of getting into it, he became so faint that Mr. Pearse countermanded it, and turpentine stupes were applied to

the abdomen. After another dose of tincture of opium, mxxv, the pain became less, and at 9 p.m. he fell asleep.

The following morning the pain and vomiting, with much flatulence, recurred, and on examining the abdomen Mr. Pearse discovered a small umbilical hernia, which was very tender on pressure, though not tense; and thinking it possible that the symptoms might be due to the strangulation of this tumour, he requested me to see the patient, who till then had not been aware of the existence of the swelling. Mr. Pearse's note in the Hospital Case-Book is to the following effect:—"Nov. 2nd., Mr. Holthouse saw him, examined the tumour at umbilicus, and did not think it had anything to do with the symptoms." Half a grain of opium in pill was ordered every three hours, and small quantities of brandy and ice, and in the evening an enema of Ol. Tereb. ʒiv, Ol. Ricini ʒviij, Aq. calid. Hj, was administered, which produced free action of the bowels and relief from the flatulent distension. He passed a comfortable night, and on the following day the pain had nearly gone from the side, and he complained only of having to pass water frequently, and some pain at the end of the penis; there was no blood in the urine. The patient had no return of the symptoms and left the hospital well on the 16th.

The *grounds* on which the above diagnosis was made were, the condition of the hernial tumour, which was free from all tension; the situation and severity of the pain, greater than is ever seen in mere strangulated hernia, the retraction of the testicle, the absence of all inflammatory symptoms within the abdomen, and of all dragging sen-

sation. Its correctness was confirmed by the yielding of the symptoms to the remedies employed, and the subsequent irritability of the bladder and pain at the end of the penis. These kind of cases are not uncommon.

On the 11th of April, 1868, I was requested to see the following case of so-called strangulated umbilical hernia.

Case 29.—*Large umbilical hernia, with symptoms of strangulation not due to the tumour.*—Mrs. L., æt. 52, a stout asthmatic woman, was sent to the hospital in April, 1868, for a supposed strangulated hernia. She was stated to be in great pain in the abdomen, and to have vomited several times; her countenance was indicative of distress, her tongue moist and dirty, her pulse small and feeble. On getting her to bed, I found her abdomen painful, distended, and tympanitic, and she had an umbilical hernia the size of two oranges. On placing my hand on the tumour, however, I was at once satisfied that it was not the source of the patient's symptoms; it was perfectly flaccid and free from all tension or tenderness; and the history confirmed the correctness of this conclusion. Not only was there no obstruction to the action of the bowels, but the patient had been the subject of diarrhœa and sickness for the last two weeks. She was put on milk diet and beef-tea, half a grain of hydrochlorate of morphia was given her in a pill, and hot flannels were applied to the abdomen.

On the following day the note was—"Has had no more vomiting or diarrhœa, and is free from pain, but

has no appetite, and is thirsty." There was no return of the symptoms, and she shortly after left the hospital cured.

One must distinguish the abdominal pain and tympanitis of atony, from that which arises from obstruction or strangulation; the former is the result of mere flatulent over-distension, and is relieved by pressure, friction, and the exhibition of stimulants and carminatives; it is also unattended by fever or increased heat of surface; the latter is the direct effect of the obstruction, combined not unfrequently with peritonitis; in this, pressure increases the pain, and food and medicine add to the sufferings, by inducing vomiting; there is constipation, a small compressed pulse, flexion of the thighs on the abdomen, and an anxious expression of countenance;—all or most of which symptoms are wanting in the tympanitis of atony.

3. *Symptoms resembling strangulated hernia may occur in connexion with a tumour in the groin not hernial.*—This is by no means of unfrequent occurrence with an imperfectly descended testis.

Case 30.—A youth, fifteen years of age, was playing at leap-frog over a post, when he alighted on the top of it. Ten minutes afterwards he began to suffer pain in the right groin, which rapidly increased and extended to the abdomen, and was followed by vomiting. At 5 o'clock on the same afternoon, May 28th, 1865, he was admitted into the hospital under my care, in great pain, and

vomiting everything he took, with a swelling looking like a large bubonocele in the right inguinal region. The house surgeon, supposing it to be a case of strangulated hernia, placed him in a warm bath and employed the taxis; but failing to reduce the supposed rupture, and the symptoms persisting, I was sent for. I found a tumour as above described, but noted that it was too prominent to be within the inguinal canal; it was tender on pressure, elastic, dull on percussion, had no distending impulse communicated to it on coughing, and the testis was absent from the scrotum on the same side. The tumour, in fact, was the testis, situated just outside the external abdominal ring. The dragging pain in the abdomen, of strangulated hernia, and the constipation, were wanting, the bowels having acted freely subsequent to the injury. A hot linseed meal poultice was applied to the tumour, and the Haustus effervescens prescribed every three hours. On the following day the swelling and the sickness had diminished; but the abdominal tenderness continued, and two days afterwards very decided peritonitis had set in. Under the influence of half grain doses of opium in pill, given every four hours, and linseed meal poultices over the whole abdomen, the inflammation subsided, and on the 12th of June he was able to leave the hospital. The liability of persons similarly affected to this patient, to peritonitis, is a fact well known to the practical surgeon; it is owing to "the relation preserved with the peritoneal cavity, by which morbid actions originating in the testicle, are liable to extend to the parts in the abdomen."

Case 31.—*Undescended testis, with symptoms resembling strangulated hernia.*—"I was summoned one evening to the hospital to see a supposed case of strangulated hernia. On my arrival I found the patient, a stout labourer, aged thirty-three, and a married man, with a considerable swelling in the right groin, which was of an oval form, received a slight impulse on coughing, and was more solid and tender than is usually the case with a rupture. The house pupils had made unsuccessful attempts to reduce the swelling, which gave the man much pain. He stated that he was subject to a swelling in the groin, which occasionally came down in the daytime and disappeared at night, but he had never worn a truss. It descended the evening before, and caused considerable pain; and although it went away during the night, the abdomen had continued painful during the day. Whilst straining himself at work in the evening it again made its appearance; and as it occasioned considerable pain, he came to the hospital for relief. The abdomen was tender on pressure, and he complained of pain in it chiefly in the vicinity of the umbilicus. He did not feel sick, and his bowels had been open twice during the day. The pulse was full and hard. There was no testicle on the right side of the scrotum, but the left was in its natural situation, and of proper size. I concluded that the tumour consisted of a retained testicle, which had been accidentally protruded at the external abdominal ring, and become inflamed from pressure, and that the inflammation had extended to the peritoneum, the latter membrane being, however, only slightly affected. I could not

quite satisfy myself whether a portion of intestine had accompanied the testicle, though this appeared very probable. I ordered the man to be bled, fourteen leeches to be applied over the swelling, and a brisk cathartic to be given him. He continued in suffering during the early part of the night, but having dropped asleep he found that the swelling had disappeared. The bowels were relieved in the course of the morning, but the groin and abdomen continued tender for two or three days."*

Although the symptoms which follow an injury to the undescended testis have a close resemblance to those of strangulated hernia, the surgeon must ever bear in mind the possibility of the latter accompanying it, which, indeed, is not a very unusual occurrence, and is sometimes even further complicated by the presence of fluid. In such cases there will be in addition to the symptoms common to the testicular affection and strangulated hernia, those proper to the latter, viz. the dragging sensation in the abdomen and the obstructed bowels.

Case 32.—*Small glandular tumour in the right groin, with symptoms resembling strangulated hernia, due to nephralgia.*—Mrs. A., æt. 29, was seized suddenly at noon of the 29th of March, 1869, with severe pain in the right inguinal region, followed by vomiting of everything she took. Her regular medical attendant having been sent for, prescribed medicines, and poul-

* Curling, 'On the Testis,' p. 37.

tices to the part; but the former were immediately rejected, and the latter failed to relieve the pain. At 7 p.m. of the same evening I was called in, and found a pale, sickly looking woman, without any anxious or painful expression of countenance, with a moist and clean tongue, a rather weak but not frequent pulse, and with no fever. There had been no action of the bowels during the day, but the abdomen was flat and flaccid, and bore hard pressure everywhere. The pain, which was very severe, and obliged her to cry out, was referred to the right inguinal region, which was very carefully examined, as she affirmed she had had a rupture there some years ago; but nothing was discovered except a slightly enlarged gland, which she said was the remains of the rupture, and had evidently nothing to do with the present symptoms. Pressure made over the seat of the pain did not increase it, but made over the right loin it did, the pain radiating thence over the abdomen and down the thigh, which is very numb, as well as the right arm, though in a less degree. During the whole period of this attack she had expelled involuntarily small quantities of urine. There was no globus hystericus, and the patient had not an hysterical aspect. A mustard poultice was directed to be applied to the pit of the stomach, and half a grain of hydrochlorate of morphia to be given in the form of a pill immediately, and washed down by half a wine-glassful of brandy-and-water, the same to be repeated in two hours if not decidedly relieved. At 10.15 p.m., when I visited her again, reaction had taken place; the skin was hot, the face slightly flushed, the

pulse 84 and full. All pain and sickness had gone—she had taken only one of the pills, and had had some beef-tea. On the following morning this patient might be said to be perfectly well; the skin was moist and cool, the tongue clean, the pulse normal; she had made a good breakfast, and complained only of a feeling of soreness in the region of the former pain.

Before passing to the consideration of the subject in the next section, I will relate the following case.

Case 33.—*Double femoral hernia, one strangulated, the other temporarily irreducible.* — Mrs. A., æt. 42 (widow), was admitted into the Westminster Hospital under the care of my friend Mr. Brooke, at 11.45 p.m., on Tuesday the 19th of June, 1868, with symptoms of strangulated hernia. An irreducible femoral hernia occupied the left groin, and a smaller one the right. She stated that five years ago, whilst engaged at the wash tub, the hernia on the left side came down; but she had always been able to return it till yesterday, when she found herself unable to do so; at the same time she also noticed a small lump in the right groin, which gave her a good deal of pain, and caused her to vomit. On the day of her admission, as she found herself getting worse, she applied to a surgeon, who tried to reduce the ruptures; but being unable to do so, sent her into the hospital. On admission she was ordered a warm bath, and the taxis was again tried, but without avail. On the following day the bowels acted slightly, but the vomiting continued at long intervals; the tumour in the

right groin also remained tender on pressure, and very tense. Ice was applied to the tumour, 20 minims of liq. opii sed. given, and Mr. Brooke sent for. After placing her under chloroform, Mr. Brooke made another attempt at reduction by the taxis, but, failing to reduce it, operated in the ordinary way. A small knuckle of intestine was found tightly constricted, and adherent to the hernial sac; the stricture was divided and the intestine returned, with immediate relief to all the symptoms.

The patient made a good recovery. On the 25th the tumour in the left groin having much diminished since the operation, was returned by slight pressure.

4.—*Symptoms of strangulation, or resembling them, may arise without any tumour, either occult or apparent, but from internal causes.*—Under this head are included all internal strangulations, enteritis, intussusception, &c., as well as those which arise from the lodgment in, or the passage through, their excretory ducts, of biliary and renal calculi. The treatment of the above class of cases does not come properly within the scope of this work, except in as far as they may be accompanied by external tumour, or with the history of a former rupture, examples of which have already been given; but before bringing this part of my subject to a conclusion, I must make a few additional remarks on the condition of the tumour as subservient to diagnosis. Given, for instance, a case in which the ensemble of symptoms that characterise strangulation are present, along with an irreducible hernial tumour, how are we to know whether they are

due to the tumour, or, indeed, to strangulation at all? In reply to this question, it may be stated that in strangulation the tumour is nearly always more or less tense and tender on pressure, which it is not in a simple irreducible hernia not strangulated; still it must be confessed that there are occasional exceptions, in which tension may be absent though strangulation exists, or may be present, together with pain, although the contents of the sac are not strangulated. Examples of the latter description of cases have been given in the section on Temporary Irreducible Herniæ; while the case I shall presently narrate is a notable instance of the former. Nevertheless, as a general rule, should symptoms of strangulation coexist with a painful and tense hernial tumour, it would be right to act on the assumption that they stood in the relation to each other of cause and effect; while absence of tension and pain may, on the other hand, be generally regarded as indicating the non-implication of the tumour in the symptoms. As collateral means of forming a judgment in these cases, we must, of course, take into consideration the condition of the abdomen, the site and character of the pain, and the history of the attack. The distinction of strangulation, whether external or internal, from affections which may resemble it, may often be assisted by the exhibition of purgatives or enemas, which generally afford relief in the latter, but augment the sufferings in the former.

Case 34.—*Strangulated femoral hernia, without tension or pain of the tumour.*—E. P., æt. 70, was admitted

under the care of my colleague, Mr. Cowell, on Wednesday, February 9th, 1870, at 3 p.m., with a femoral hernia in the left groin, and symptoms of incarceration, but which she absolutely refused to have operated on.

On the 11th, when I saw her for the first time, she had a short hacking cough, with frequent and difficult respiration, her pulse was scarcely perceptible, her hands cold and clammy, and she appeared moribund. The abdomen was greatly distended, hard, and tympanitic, but not painful, and a femoral hernia, the size of a hen's egg, occupied the left groin. This tumour was freely movable, and not tense or painful on pressure or handling; no impulse was detectable on coughing; it was neither dull nor resonant on percussion; the chief part of it was evidently solid, and felt like hardened omentum, but there was also very distinct superficial fluctuation, from a stratum of fluid interposed between the solid part and the skin. The symptoms were obstruction of the bowels since Monday, with occasional vomiting, increased after taking food; but some beef-tea, ale, and effervescing drinks, had been kept down. She complained of no pain, but called for purgatives to relieve the bowels.

History.—In 1847, the hernia first appeared suddenly, while lifting a heavy weight, and was immediately followed by symptoms of strangulation, for which she was admitted into the hospital under Mr. Benjamin Phillips. The symptoms subsided under treatment without any operation; but the hernia was not returned, and has remained irreducible ever since, undergoing no alteration whatever. Mr. Phillips, she says, advised her never to

have any operation performed on the tumour, and this was the reason she would not consent to the proposal of an operation on the present occasion. She died one hour after I saw her.

February 16th. The body having been removed from the hospital, it was with some difficulty that I procured a post-mortem examination, which was done at the undertaker's. The hernial sac contained a small quantity of blood-stained serum at its anterior part, the rest was occupied by a solid ball of omentum, adherent in every other part, and especially firmly at the neck of the sac; a small space was, however, left at its inner part, into which a small part of the circumference of a bit of the ilium had insinuated itself and become imprisoned, not so tightly, however, but that it might possibly have escaped; it was discoloured, but had not lost its polish, being neither gangrenous nor ulcerated. There was considerable distension of the small intestines, which, firmly bound down by the adherent omentum in the sac, must have interfered much with the action of the diaphragm and increased the dyspnœa. There was no peritonitis. Doubling up the part of the bowel which was incarcerated, had nothing else been contained in the sac, it would not have formed a tumour larger than a cherry, and probably would have produced no visible projection.

CHAPTER V.

ON NON-HERNIAL TUMOURS.

These tumours may be grouped into those of the groin, including the region immediately above and below Poupart's ligament, and those of the scrotum, labium, and perineum, though not unfrequently the groin and scrotum, or the groin and labium, may be invaded by the same tumour. As regards consistency, they may be either solid or fluid, or partly one and partly the other. The solid tumours are composed, for the most part, of fat, fibrous tissue, or gland structure; the fluid, of serum, blood, pus, or other matters, with which may be occasionally combined gas.

Section 1.—*On the Solid Tumours of the Groin, Scrotum, and Labium.*

Fatty Tumours.—Examples of this kind of tumour occur with sufficient frequency, and some of them bear such a general resemblance to an irreducible epiplocele as to call for a few remarks on their mode of diagnosis. Historically and physically, they differ from hernia in the following

particulars: 1. They are of very slow growth, and come on without obvious cause. 2. Their growth and increase of bulk are progressive, so that they are never smaller at one time and larger at another. 3. When pinched up and rendered tense by pressure between the fingers and thumb, their surface has a lobulated and dimpled appearance. 4. When lifted off the parts beneath, no impulse is communicated to them if the patient coughs. Lastly, unlike hernia, they are never reducible. Notwithstanding these very obvious differences from hernia, they are sometimes mistaken for it, as in the following case reported by Mr. Maunder in the 'London Hospital Reports,' 1864, p. 121.

Case 35.—*Lipoma in the inguinal region simulating hernia.*—"A healthy female, aged 26, came under my observation in 1863, requesting my opinion concerning the nature of a swelling in the left groin. She had been aware of its existence about four months, and stated that occasionally it was painful even when untouched, and that the pad of a truss, which two practitioners whom she had consulted had advised her to wear, increased the suffering. She believed that the swelling varied in its dimensions, and ascribed certain ailments, and, amongst them, some recent temporary abdominal affection, to the tumour.

"On physical examination, the tumour, of a somewhat ovoid form, with its long axis directed from below, near the spine of the pubis, upwards and outwards, was soft, elastic, lobulated, both to the eye and to the touch, and

was readily picked up off the aponeurosis of the external oblique muscle, except at its inferior extremity, where it was narrowed into a firm pedicle, as it were, and was firmly attached to the above aponeurosis, about the site of the external abdominal ring, giving one the impression that it might be possibly extruded at this spot. There was no impulse on coughing, the tumour being forcibly withdrawn from the grasp of the fingers during this act.

"An incision disclosed a discontinuous fatty tumour having a distinct capsule, and firmly adherent to the fibrous structure about the abdominal ring. It was not extruded at this aperture."

An analogous case, in which the same mistake was committed, is also published by Mr. Annandale, of Edinburgh, in the 'British Medical Journal of February 22nd, 1868.'

Very much resembling an epiplocele in the canal, especially if this be irreducible, is the fatty tumour of the spermatic cord—the "hernie graisseuse" of Pelletan—which, indeed, can scarcely be distinguished from it and, perhaps, not certainly diagnosed. This is not of much importance, because, unless symptoms of strangulation are present, neither the one nor the other requires to be meddled with: in the event, however, of such symptoms occurring, without any other obvious cause for them, it would be quite proper to make an exploratory incision into the tumour. When the tumour grows quickly, or produces other inconveniences, it may be removed by the knife in the usual manner.

Fatty tumours and outgrowths, when invading the scrotum, have been mistaken for hydrocele and urinary infiltration, as in the following case from the 'Trans. Path. Soc.,' vol. vi, p. 232.

Case 36.—*Fatty scrotum mistaken for hydrocele and infiltration of urine.*—The preparation was exhibited by Mr. Jabez Hogg, and was "removed from a patient, æt. 65, who, four years before his death, contracted a gonorrhœa, from which he experienced so little inconvenience that it remained without treatment for six months; about that time experiencing some difficulty in passing his urine, he applied to a surgeon, who passed a catheter, and from an obstruction offered at the prostatic portion of the canal he thought there might be a stricture.

"From this time the disease increased, and the scrotum became considerably enlarged. Hydrocele was suspected, but the whole of the parts becoming thickened and apparently swollen, infiltration was supposed to have taken place, especially as general irritation set in, with acceleration of pulse. It was thought advisable to pass an exploration trocar; but, as no fluid escaped, he was at once put under active treatment, with some considerable relief, which lasted two years. The disease then took an unfavorable turn, and the increase in the size of the penis produced a state of phymosis, with much constitutional irritation; this, with an attack of bronchitis, at the end of the fourth year, terminated the patient's existence.

"Upon removing the parts after death, with a small portion of the bladder attached, they weighed forty ounces, the fatty mass completely investing the penis from the glans to the pubic region; the prostatic portion of the canal being thus surrounded offered great resistance to the flow of urine, which induced the belief of stricture in the early stage of the disease, coupled as it then was with a gonorrhœa. The bladder was thickened, and the adipose tissue is freely distributed throughout the cellular structure of the penis."

The simultaneous affection of the skin of the penis, scrotum and perineum, in this case, following a supposed stricture of the urethra, affords some excuse for its being mistaken for infiltration of urine, but not for its being confounded with hydrocele. Had the scrotum been pinched up between the fingers and thumb, it would have been found that the enlargement depended on thickening of these parts, and not on distension from fluid within the vaginal sac, which would have produced thinning of the walls; the thickening from urinary infiltration is an inflammatory œdema, painful, and pitting upon pressure. Passive, or non-inflammatory œdema, is rarely unconnected with general dropsy; the skin is pale, thin, shining, translucent, pitting on slight pressure, and free from redness, and puncture with a needle gives exit to a clear colourless fluid, not urine. In another case of fatty tumour of the scrotum, exhibited by Mr. Gray, and published in the same volume of the 'Path. Soc. Trans.' attention had not been called to the swelling during the patient's lifetime, but Mr. Gray

remarks "the diagnosis of this form of tumour of the scrotum is exceedingly difficult, and no decision as to its nature could be arrived at previous to the dissection of the parts being made." Putting aside the fact of the presence of fat in the textures of the body, where it does not exist normally, it should seem that the direct continuity of the fat in the scrotum with that of the lower part of the abdomen on the one hand, and that of the perineum on the other, together with the uneven lobulated character of the tumour, and its insimilitude to any other structure, would have suggested the real character of the growth.

Fibrous Tumours.—These occur so rarely in the neighbourhood of the groin, and their physical characters are so well marked, that they are less likely to be confounded with hernia than many other tumours in that region; I will merely, therefore, name, in connexion with them, the fibrous tumour of the iliac fossa of M. Nélaton, occurring only in the female, and that of the round ligament of the uterus, of which latter, the only published record is by Mr. Spencer Wells, in the 17th vol. of the 'Trans. Path. Soc.,' to which the reader is referred for further information.

Fibrous tumours of the scrotum, unless very large, can scarcely be mistaken for any other disease; they are hard, solid, sub-cutaneous, non-inflammatory, and painless growths, over which the skin glides readily, and which can be lifted up from off the testicle and epididymis. It is only after they have existed for a long

time, and have attained considerable dimensions, that they become adherent to the testicular coverings and might be mistaken for disease of the gland; but the history of their origin and progress, and their want of resemblance to any of the known diseases of the testicle, are sufficient to distinguish them. The same observations are likewise applicable to, those well known and impossible to be mistaken diseases, elephantiasis, and epithelioma or chimney-sweepers' cancer. Solid tumours of the labia are not uncommon, but none of them bear much resemblance to hernia; they consist either of general hypertrophy of one or both labia, in which the nymphæ may participate, or of fatty and fibro-cellular growths. There is no other way of getting rid of these tumours than by the knife; how far it may be expedient to meddle with them must be determined by the circumstances of each case.

Glandular tumours.—These are far more likely to be mistaken for hernia than either of the former; for besides their similitude in form and site, they are more liable to injury and inflammation than the fatty and fibrous tumours, and when so affected, may give rise to symptoms simulating those of strangulated hernia. In the Museum of the Westminster Hospital, is a cast I had taken from a patient of mine who had a direct inguinal hernia in one groin, and an enlarged gland in the other; and so closely do the tumours resemble each other, that the eye alone cannot detect which is the hernia and which the gland: so, too, when an enlarged or inflamed gland

occupies the crural ring, and is attended with constipation and vomiting, a strangulated rupture suggests itself as the cause of the symptoms ; indeed, the following conditions have been met with :

A. A glandular tumour occupying the site of the crural ring, with symptoms of strangulation from a small strangulated hernia behind it.

B. An inflamed gland, with a small hernia not strangulated behind it.

C. Ditto, without any hernia whatever. How are we to diagnose these conditions ?

It may be stated generally, that absorbent glands are more moveable than irreducible or strangulated ruptures; and, unless fixed by inflammation of the connective tissue in which they are embedded, they may be pushed about and even lifted off the parts they overlie, having no neck or root of connexion with the underlying structures, as a hernia. In the first of the particular conditions above mentioned, the symptoms may certainly be pronounced due to strangulation, if it be found that the gland when pulled forward and compressed, is not painful, whereas direct pressure in a backward direction is attended with pain; for then it must be evident that the seat of the latter is behind the gland and not in it. In the second and third of the above cases, there will be sufficient evidence of inflammation in the gland itself, to render it not improbable that the symptoms are the result of this and not of a strangulated rupture. In all such cases, however, it is to be remembered, that inflammation and suppuration of a gland may coexist with strangulation ;

and that, in every case of doubt, it is proper to act on that supposition (see p. 77). A number of absorbent glands, with the surrounding connective tissue, occasionally become matted into a hardened mass, and constitute a tumour which the ignorant may mistake for a rupture.

Case 37.—A widow, 66 years of age, presented herself among the out-patients, when I was assistant-surgeon to this hospital, with a tumour in the left groin, which she called a rupture. She said she first observed it about nine months ago, after carrying a heavy load, and that till quite lately she had been able to reduce it; she was now unable to do so, and therefore came to the hospital to have it reduced. On examination I found a large red irregular-shaped tumour, evidently composed of a mass of diseased glands, and on further investigation I discovered that the source of this enlargement was carcinomatous ulceration of the uterus and vagina: yet so prone is poor human nature to deception, and so loth to be undeceived, that this patient went away dissatisfied that her so-called rupture was not returned, and, as I afterwards learnt, she declared that her case was not understood.

But of all glandular swellings about the region of the groin, none, perhaps, are so likely to be mistaken for rupture as an imperfectly descended testicle. I have seen the mistake committed more than once, and once I saw it cut down upon, in the belief that it was a strangulated hernia. A man has had one testicle in his groin all his life; he has noticed the swelling, and has fancied,

or been told, that he has a rupture; he has even in some cases worn a truss for it. From a slight hurt or other cause the tumour becomes inflamed and painful, and increases in size; this is not unfrequently accompanied with sickness and constipation, and other constitutional disturbance, and a surgeon is consulted; he takes note of the above symptoms, but he does not observe that only one testicle is in the scrotum, and the case is pronounced to be a strangulated hernia.

Case 38.—"Mr. Pott was sent for in a great hurry to perform the operation of bubonocele on a young man who was suffering most acute pain in the groin and back. It appeared that, the day before, he struck his groin against a piece of timber, which gave him such exquisite pain that he fainted away, and his groin became immediately swollen to a very considerable degree. An apothecary bled him and poulticed the tumour, but he passed the night without sleep, and in great agony. The next morning he stated that he had long had a rupture on that side which had never perfectly returned. He was again bled, and some pains were taken to reduce the rupture. As the attempts produced great increase of pain they were desisted from, and two clysters and a purge were given, but without effect. The pain was exquisite, the patient very sick, and the groin and scrotum were much swollen and very hard. The general appearance and figure of the tumour did not appear like that of a bubonocele. Instead of pointing obliquely from the ilium to the pubes, it lay as it were across the

groin; the scrotum was full and large, but much harder than Mr. Pott had ever found a piece of intestine. The discoloration was not at all like the effect of mortification, but had all the appearance of ecchymosis. The man had not had a fair stool for three days; he had been very sick, and had vomited; his belly was tight, hard, and painful, and his pulse was much too quick; very little information was to be gained from examination of the tumour, for the pain was so exquisite that he could not bear the slightest touch. On inquiring further concerning the rupture, it was ascertained that he had worn a truss the first four years of his infancy, but that it never kept the gut totally or perfectly up; and that, as he grew bigger and ran about, he was obliged to leave it off on account of the pain it gave him; that since, little or no alteration in the tumour had been observed, and that it had never given him any trouble or uneasiness if he did not handle it, or kept the waistband of his breeches and his watch from pressing it. All this being far from satisfactory, Mr. Pott determined, before attempting any operation, to try the effects of a brisk cathartic, which produced a plentiful discharge, and relieved all apprehensions of stricture. Under fomentations and poultices, &c., the tumour subsided, and in about seven or eight days the scrotum was so unloaded as to permit an accurate examination, by which it was ascertained that it contained no testicle. Upon mentioning this circumstance to the patient, he said that he never had one on that side. This declaration was a solution of all difficulties, and of all the appearances. When all the

effects of the blow were removed, there appeared in the groin a testicle of natural size and figure, which, by being much bruised, had caused all the mischief."*

A testicle which has not descended further than the groin, remaining at the external aperture of the inguinal canal, or a little below it, may sometimes be pushed back partially or entirely into the ring, but it soon descends again when the pressure is removed. Here we have a swelling in the groin that admits of replacement like a hernia. The size, form, and consistence of the swelling, which experiences no impulse on coughing, the peculiar sensation excited by pressure, the connection of the tumour with the spermatic cord, if that cord can be felt, and the absence of the testis from the scrotum, will prevent us from mistaking this for a rupture either intestinal or omental. The same signs will likewise distinguish this gland from a hernia even when it is found in more unusual situations, as in the perineum, or in the upper part of the thigh, of which examples have been recorded by Mr. Curling and others; and in the 'Provincial Medical Journal,' 1843, p. 431, is related the case of a man, one of whose testicles, instead of passing out of the abdomen at the inguinal canal, made its exit at the crural ring. The organ was mounted upon the abdomen like a crural hernia, and a portion of intestine traversed the inguinal canal, forming a rupture on that side. It is not unusual to have a rupture descend into the same sac as contains the testicle and become tem-

* Curling on the 'Testes,' p. 42.

porarily or permanently irreducible, as in cases 3 and 15.

I have, in a former part of this work, related the case of a young female in whom an omental hernia was mistaken for an ovary; but it occasionally happens that one or both these organs become displaced, forming a tumour or tumours in the groin, which constitute real ovarian herniæ. They may pass out at the femoral ring, and present themselves in the situation of a femoral hernia; but they most frequently traverse the inguinal canal, and appear just outside the external abdominal ring. They are distinguishable from intestinal or omental herniæ by their history, their irreducibility, the dragging sensation they give rise to in the hypogastric regions, and, above all, by their tenderness and enlargement during the menstrual epochs. As these ovarian herniæ are not even alluded to in most of our standard works on surgery, they must be exceedingly rare, nevertheless they have been described by most writers on diseases of women, and Pott relates the following case:

Case 39.—"A healthy young woman, 23 years of age, was taken into St. Bartholomew's Hospital, on account of two small swellings, one in each groin, which for some months had been so painful that she could not do her work as a servant. The tumours were perfectly free from inflammation, were soft, unequal in their surface, very movable, and lay just outside of the tendinous opening in each of the oblique muscles, through which they seemed to have passed. The woman was in full

health, large breasted, stout, and menstruated regularly; had no obstruction to the discharge per anum, nor any complaint but what arose from the uneasiness these tumours gave her, when she stooped or moved so as to press them. She was the patient of Mr. Nourse. He let her blood and purged her, and took all possible pains to return the parts through the openings through which they had clearly passed out. He found all his attempts fruitless, as did also Mr. Sainthill and myself; and the woman being incapacitated from getting her bread, and desirous to submit to anything for relief, it was agreed to remove them. The skin and adipose membrane having been divided, a fine membranous bag came into view, in which was a body so exactly resembling a human ovarium that it was impossible to take it for anything else; a ligature was made on it, close to the tendon, and it was cut off. The same operation was done on the other side, and the appearance, both at the time of operating and in the examination of the parts removed, was exactly the same. The young woman has enjoyed good health ever since, but is become thinner and apparently more muscular; her breasts, which were large, are gone; nor has she ever menstruated since the operation, which is now some years." *

It can scarcely be necessary to do more than allude to those swellings of the groin, caused by a dislocation of the head of the femur, on the pubes or ileum; or the projection sometimes occasioned by a fracture of the neck of the femur; or the stercoral tumours, which are wholly

* Op. cit., vol. iii, p. 352. See also Lawrence, p. 229.

intra-abdominal, cause no visible tumour externally, and come more within the province of the physician than the surgeon.

Enlargements or tumours of the testicle, may be distinguished from herniæ by their solidity and weight, by their history, by the absence of all other structures from the scrotum, and by the undistended condition of the inguinal canal.

It is by no means unfrequent to find some of these diseases of the testis combined with hydrocele or hernia, or both, as already exemplified in former parts of this treatise; and these combinations sometimes make it difficult to form a certain diagnosis at first sight, so that one is obliged to rest satisfied for a time, in determining what the tumour is not rather than what it actually is; this negative evidence is, however, often of great value, especially where an operation is in question. If, for instance, some of the symptoms of strangulated hernia were present in connexion with a tumour in the scrotum, could it be determined that, whatever might be the nature of the tumour, it was certainly not a hernia, a great positive advantage would be gained,—the advantage, namely, of not subjecting the patient to a needless and dangerous operation.—I shall proceed now to the consideration of the fluid tumours of the groin, which are liable to be mistaken for hernial or other tumours.

Section 2.—*On the Fluid Tumours of the Groin.*

Serous Tumours.—I have already given examples of fluid tumours from dropsy of an old hernial sac, (see cases 10 and 11); and in chapter 2, section 1, I called attention to the frequency of congenital hernia among the labouring classes, proving thereby, that the patency or partial closure of the serous canal which originally transmitted the testis, is of more frequent occurrence than is generally believed. This same canal is sometimes the seat of a serous effusion, constituting some of the various forms of hydrocele. If open in its whole length, and fluid accumulates in it, it is called a congenital vaginal hydrocele; if open only as far as the tunica vaginalis testis, a congenital or diffused hydrocele of the cord; if closed above, but open from that point to the testis, an encysted hydrocele of the cord; the latter by its shape and situation closely resembling an oblique inguinal hernia: the translucency, the fluctuation, the dulness on percussion, the irreducibility, and the history, are however sufficient to distinguish them.

Case 40.—*Hydrocele of the cord.*—A little boy, $6\frac{1}{2}$ years of age, was brought to me on the 11th of July, 1866, for a tumour occupying the right half of the scrotum and the inguinal canal. It was of elongated shape, hardish, tense, and elastic, the skin over it of a natural colour, and when stretched upon the tumour the latter was translucent; it obscurely fluctuated, and the

sound emitted on percussion was dull; it could not be made to disappear on pressure. The testicle occupied the lowest part of the scrotum, and could be distinctly isolated from the swelling above. No impulse could be felt in the tumour when the child coughed or cried, which it did from fear, not from pain caused by the handling of the swelling. There were no other symptoms besides the local ones, and the child's mother had not observed the swelling till the previous day. The tumour was painted with the tincture of iodine every other day, but without any appreciable results, and at the end of the month I punctured it, and let out a considerable quantity of a clear, straw-coloured fluid, which did not re-collect.

Hydroceles of an analogous nature, connected with the canal of Nuck, are sometimes met with in the groin of females, and may extend into the labium. It is well known also, that although the descent of the testis into the scrotum or even out of the abdomen, may have been prevented, a diverticulum of peritoneum may still pass into the groin or scrotum; and if the communication of this bag with the abdominal cavity should remain open, there will be a pouch ready formed for the reception of a hernia. Should, however, this serous sac become closed above, while the testis remains in the abdomen, it is conceivable that, under certain circumstances, fluid might accumulate in the lower unobliterated portion, and a simple cystic tumour be thus formed. On the other hand, should this closure of the sac above take place, after the testis had entered the inguinal canal or passed

through the external ring, and fluid subsequently accumulated within it, we should have a true vaginal hydrocele, though situated in the groin instead of in the scrotum. This is what actually took place in the following case, which is further interesting, from being accompanied by symptoms which led to the belief that it was a strangulated hernia.

Case 41.—*Inguinal hydrocele mistaken for strangulated hernia.*—H. B., aged 48, blacksmith, was admitted into Henry Hoare ward early on the morning of March 19th, 1861, with a painful tumour in the right groin, for which he was wearing a truss, and great tenderness and distension of the abdomen. The tumour, he said, had become much larger since the 16th, and on the day before his admission he had had vomiting. His pulse was feeble, and there was considerable prostration. The house-surgeon, believing the case to be one of strangulated hernia, placed the patient in a warm bath and used the taxis; but the swelling not yielding to these means, I was sent for. Hearing that the taxis had been tried without success, I gave directions that everything should be got ready for operating, and on my arrival I found the patient already on the operating table, and the inhalation of chloroform commenced, preparatory to my making an attempt to reduce the tumour by the taxis. On handling it, however, I was at once struck by its softness, want of tension, and mobility; then, again, it distinctly fluctuated, and was dull on percussion, and withal was too prominent for a bubonocele. The greater

bulk of it lay between the integuments and aponeurosis of the external oblique muscle. On examining the scrotum, the testis was found to be absent on this side; but on carrying the finger into the inguinal canal, a small solid body, probably that organ imperfectly developed, was distinctly felt. The patient being carried to bed, on the following day this history was obtained:

Twenty-five years ago, whilst lifting a heavy weight, and giving a sudden jerk to raise it a little higher, he felt something give in his right groin, with great pain. He continued his work, however, and did not examine the part till night, when he found a hard lump, tender on pressure, and as big as a small marble. For five weeks afterwards he had some pain in the "lump," but it underwent no change in size or consistency. Twelve years ago, he was persuaded by one of his mates to wear a truss, and he has continued to wear one ever since. From the first appearance of the tumour, he has been subject to occasional attacks of pain in it, attended with an increase of its size and hardness. He thinks that it has altered to its present size and softness within the last five years only, but he is not certain on this point. He is not an intelligent man, and was not aware that he had only one testicle in the scrotum. It was further elicited that he had been out of work for some weeks, and living very miserably; but so far from there being any intestinal obstruction at the time of his admission, he was actually suffering from diarrhœa; hence the tympanitis and abdominal pain which had been mistaken for peritonitis. Nevertheless, it must be conceded

that the tumour, the truss, the distended and painful abdomen, the prostration and vomiting, were well calculated to throw a surgeon off his guard, and so lead to the belief in a strangulated hernia.

Having met with no similar case to this, and finding none recorded in any of our standard surgical works, either general or special, I had thought this to be unique; but on looking through the 'Transactions of the Pathological Society,' I find an identical affection recorded by Mr. Curling, in the 9th vol., p. 316, and two more of a similar nature have been described by Dr. Gherini in the 'Annali Universali di Med.,' vol. clix, p. 118, and in the 'Brit. and For. Medico-Chirurg. Review,' vol. xxi, p. 268. Mr. Curling's case I here transcribe.

Case 42.—*A large hydrocele in the right groin; the testicle being undeveloped and detained in the inguinal canal. History.*—A man, æt. 60, was admitted into the London Hospital, and died of pneumonia and chronic gastritis. It was supposed during life that he had a hernia on the right side, but the swelling was not subjected to surgical examination in the hospital.

On post-mortem examination, a large swelling was observed in the right groin, and the scrotum on that side was defective, and contained no testicle. The swelling was found to consist of a large cyst, with thin walls, which projected from the ingninal canal, through the external ring, and mounted upwards on the aponeurosis of the external oblique muscle. A constriction in the sac corresponded to the external ring. On laying

open the sac, the testicle was found in the part lodged in the inguinal canal. The gland with its epididymis was quite small, like the undeveloped testicle of a child, but it was free from adhesions, and healthy in structure. The large cyst was the dilated tunica vaginalis; it contained about six ounces of serous fluid. It was slightly saeculated, and had no communication with the peritoneum, though it extended up to the internal ring. The vas deferens extended over a portion of the walls of the cyst in its eourse to the epididymis."

These inguinal hydroceles may be aeute, as in the following example under the eare of Mr. Hulke, in the Middlesex Hospital.

Case 43.—*Acute inguinal hydrocele.*—"A French polisher, aged 35, was admitted into Clayton Ward with a large and very painful swelling in the right groin. He had had a small swelling in this situation for twenty-two years, during whieh time it had scareely inconvenienced him. The day before he came into the hospital it beeame very painful, and increased greatly. His bowels were free and he had not any siekness. The swelling measured six inches and a half along the groin, and four inehes and a half aeross; it visibly fluetuated, and it was evidently in front of the aponeurotic tendon of the obliquus externus muscle. The testis eould be distinguished within it, over the external abdominal ring; and behind it, in the inguinal eanal, was a hard knotty mass, which, as it followed the testis when this was moved, was evidently conneeted with the spermatic

cord. The same side of the scrotum was undeveloped. The local application of ice, and a few days' rest in bed, relieved the pain, and lessened the swelling to its former size."*

Adventitious cysts are occasionally developed in the region of the hernial outlets, all of which may be diagnosed by their translucency and fluctuation, aided, if necessary, by puncture with the needle. Small bursal cysts have likewise been found in the groin, communicating with or distinct from the cavity of the hip joint. In the former case the tumour may be made to disappear on pressure when the thigh is flexed; in the latter it will be unaffected under these circumstances. The fluctuation is usually sufficient to determine the nature of these tumours, which, unless they cause inconvenience by their size, may be left alone. It is not very uncommon to have herniæ associated with these cysts, either on the same or on the opposite side, and such a hernia may become strangulated; or, again, symptoms of strangulation may arise from internal causes without hernia, in which case these tumours may be mistaken for them. In all such cases an operation should be done, unless it is quite clear that the symptoms have no connection with the tumour, which can rarely be predicated. Mr. Shaw has related the case of a lady who died from intestinal obstruction, and in whose groin he discovered a round tense swelling, of the size of a small egg, which emerged from the femoral ring, under the crescentic arch. Thinking that this tumour

* 'Lancet,' Feb. 12th, 1870, p. 228.

was a hernia, as it could not be reduced by the taxis, he operated upon it. He presently found that the supposed hernial sac was a serous cyst; by dissecting it away, he exposed the cribriform fascia, and satisfied himself that there was no opening into the abdominal cavity.*

Sanguineous Tumours.—Tumours in the neighbourhood of the groin containing blood are aneurisms, varix of the femoral vein, varicocele, blood cysts, and hæmatocele of the spermatic cord. The first are distinguishable by their position over an artery, their pulsation, and bruit, and the other signs by which aneurisms are diagnosed elsewhere. A varicose condition of the femoral vein, or of the saphena at its junction with the femoral, is known from a hernia by observing that the venous tumour is but a part of the general varicose condition of the whole limb, while varicocele is remarkable for the bag of worms, feel, and other signs before pointed out (see p. 52).

Blood cysts and hæmatoceles of the cord are rare, but may be diagnosed by their history, their fluctuation, and the use of the grooved needle. A blood cyst about the size of an orange, and situated in the left groin of a young woman, was removed by Mr. Prescott Hewett, and is reported in vol. 9, p. 383, of the 'Path. Soc. Trans.' It had been growing for about two years, and till within a few days of her admission to St. George's Hospital, it was much smaller and apparently solid; it had suddenly increased after a long walk, and, from the aspect of the patient, was at first supposed to be malignant. Hæmatoceles, whether diffused or encysted, always arise suddenly,

* 'Path. Trans.,' Session 1851-52, p. 359.

either from direct violence or from straining or over-exertion; and as the fluid effused is blood, the swelling is opaque, and fluctuation somewhat indistinct, in all which particulars hæmatoceles differ from hydroceles, while the suddenness of their appearance after exertion is suggestive of hernia. They may, however, be distinguished from the latter, by the absence of all those other signs of rupture which have been pointed out in a former part of this work. The following case from Pott is instructive, as showing how surgeons of experience may be deceived.

Case 44.—*Hæmatocele of the cord mistaken for strangulated hernia.*—"A labouring man, who had fallen down in the street with a load on his back, was brought into St. Bartholomew's Hospital, on suspicion of his having got a rupture in consequence of his fall, he having immediately perceived a swelling in his groin and scrotum which he had not before. The tumour seemed to occupy the whole spermatic process, which was so enlarged by it that it was impossible to feel the passage of it from the abdomen through the muscle; but the testicle below it was perfectly distinct. The appearance of a tumour, the suddenness of its formation, the distinct situation of the testicle below, and the accidental circumstance of the man's not having had a stool for two days past, inclined Mr. Freke (whose week it was) to believe it to be, and to treat it as, a rupture. He made some attempts for reduction, and finding them fruitless, determined upon the operation immediately. He divided the

skin and membrana adiposa down to what he took to be the hernial sac; and, when he had done so, had a mind to endeavour at the return of the intestine without opening the sac. Accordingly, with his probe scissors he divided the tendinous opening in the abdominal muscle, and then again tried to reduce the gut, but to no purpose, for nothing would go up. At last, though with much reluctance, he was obliged to lay open the containing membrane. He had no sooner done this than a large quantity of blood, partly fluid and partly grumous, burst forth, and the whole tumour subsided, leaving the process perfectly free, and containing neither intestine nor omentum."*

Abscesses.—Inflammatory swellings and abscesses of the groin, have not unfrequently been mistaken for rupture, under the following circumstances: First ,when occurring somewhat suddenly after exertion; secondly, when partly reducible; and, thirdly, when containing air.

Case 45.—*Abscess occurring somewhat suddenly, mistaken for rupture.*—A mariner, 29 years of age, was admitted into the Westminster Hospital under my care, for a supposed inguinal hernia, for which he was wearing a truss. He stated that two weeks before, on going aloft, he felt some stiffness in the right hip-joint, and on examining his groin, he found a swelling there as large as a walnut. He immediately consulted a medical man, who told him it was an enlarged gland, and prescribed

* Pott, op. cit., vol. 2, p. 363.

accordingly; but a few days afterwards, finding the swelling increased, he again visited the same medical gentleman, who this time pronounced it to be a rupture, and applied a truss. On removing this I found an oblong swelling extending obliquely from near the right anterior superior spine of the ilium to the spine of the pubes; the skin over it was of a natural colour, but was slightly tender on pressure, especially towards its iliac end, and hotter than on the opposite side; no impulse was communicated to it on coughing, and it could not be made to disappear on pressure; it distinctly fluctuated, and was evidently an ordinary abscess.

Case 46.—*Psoas abscess simulating rupture.*—I was requested by a surgeon in the country to visit a female who had a swelling in the right groin, which he suspected to be a femoral hernia, though he felt some doubts about its nature. I found a soft elastic tumour, dull on percussion, slightly tender on handling, having an impulse communicated to it on coughing, and partly reducible on pressure; it distinctly fluctuated, and was evidently an abscess, and a further examination showed that it was a psoas abscess.

Sometimes an abscess of this nature makes its way downwards through the inguinal canal, and presents itself at the external abdominal ring, of which several examples have been recorded; and Mr. Shaw mentions a case in which it reached the upper part of the scrotum, and, owing to the absence of pain or deformity in the spine where it originated, at first was taken for a rupture.

In some cases gas, as well as pus, occupies the sac of an abscess; but usually this is after an abscess has been opened and air has gained admission from without, which it is sure to do if intermittent pressure be applied to its walls to squeeze out its contents. There is a class of cases, however, in which gas gains access to an abscess before it is opened, of which the most common and familiar example is the anal abscess, formed, in many cases, by a perforating ulcer of the rectum and the escape of some of its contents into the ischio-rectal fossa, thus setting up inflammation and suppuration in the connective tissue of that space. Again, these abscesses sometimes arise in the right inguinal region, from perforation of the cæcum or appendix vermiformis, of which several interesting examples have been published by Mr. Moore, in the 'Lancet' for November, 1864.

In the following case, such an abscess formed in the left inguinal region, in consequence of perforation of the sigmoid flexure of the colon.

Case 47.—*Fæcal abscess in the left groin, simulating first a malignant tumour, and afterwards strangulated hernia.*—E. F., æt. 62, washerwoman, of a sallow complexion, and very thin, was admitted into the Westminster Hospital on the 3rd of October, 1865, with a tumour in the left inguinal region, which was supposed to be malignant, and was attended with obstinate constipation. On the 13th, a swelling made its appearance on the upper and outer part of the thigh, just below the anterior superior spine of the ilium; and on the 16th, I was

requested to see the patient on account of this swelling. She was then greatly emaciated, her face expressive of suffering, her abdomen distended and tympanitic, her pulse exceedingly feeble, and she seemed moribund. A tumour of an irregular shape, resembling neither a hernia nor an abscess, occupied the upper part of the thigh; but it was so exceedingly tender that it could bear scarcely any manipulation. A distinct impulse was communicated to it on coughing, and there was fluctuation; yet this feel was not so decided but that it might have been mistaken for air; percussion gave an uncertain sound. The patient was too ill to allow me to make a more careful examination. *Diagnosis.*—"Fluid, probably abscess communicating with the abdominal cavity."

18th.—I saw the patient again, but only for a few minutes, she being too ill to be disturbed; but percussion now gave a decidedly clear sound, and fluctuation was unmistakable. *Diagnosis.*—"Abscess containing air, communicating with the abdomen, and probably with intestine."

19th.—Saw her alone at 10 a.m., and formed a decided diagnosis to the following effect, viz.—The supposed malignant tumour is an abscess communicating with intestine, which has made its way downwards into the thigh, and that it is analogous to certain anal abscesses, and contains a highly fœtid fæcal-odoured fluid mixed with gas.

By this time she had been seen by several of my colleagues, and opinions differed as to whether it was a

hernia, a malignant tumour, or an abscess—the latter opinion being only entertained by myself. Those who believed it to be a hernia, were confirmed in their opinion by one of the surgeons making an exploratory puncture, when there issued a large quantity of flatus followed by apparently liquid fæces, and had it not been for the evidently hopeless condition of the patient she would have been operated on as for strangulated hernia. She died the same evening at 7.30 p.m. The chief symptoms from which she suffered during her stay in the hospital, were constant pains in the abdomen, especially in the left iliac fossa (where a tumour was discovered), and lately in the left hip joint, great distension of the abdomen, obstinate constipation which resisted injections but yielded to opium, occasional sickness, and, during the last four days of her life, vomiting of almost everything taken.

Examination of the body eighteen hours after death.—Abdomen greatly distended and tympanitic, tumour in groin presents the same characters. On laying open the cavity, the tympanitic swelling was seen to be entirely due to great distension of the cæcum, and of the ascending and transverse colon, so that rupture of a portion of the peritoneal coat of the cæcum over the longitudinal muscular bands, with slight ecchymosis had taken place. The descending colon was healthy and undistended, so likewise was the small intestine, and no cause for this distension was discovered, so that it belongs to the class of cases described by Abercrombie as ileus, to which most of the symptoms were probably owing.

The sigmoid flexure was livid and gangrenous, and so firmly adherent to the peritoneum covering the brim of the pelvis and iliac fossa that it could not be detached without tearing, which it did with the slightest force, giving exit to a large quantity of liquid fæces. On further examination, this portion of intestine was found to communicate with the cavity of a large abscess occupying the whole of the left iliac fossa, and continued downwards into the thigh, through the space normally occupied by the iliacus muscle; externally was seen the external cutaneous nerve; internally, the anterior crural nerve and femoral vessels; above, Poupart's ligament; below, the horizontal ramus of the pubis and ilium. The intra-abdominal portion of this abscess was bounded anteriorly by thickened peritoneum and the subperitoneal and transversalis fascia; posteriorly, by the venter of the ilium, from which the muscle had entirely disappeared; its contents were liquid fæces and pus, with fœtid gas.

Traces of old and slight peritonitis were evident all over the peritoneum, gluing lightly together the convolutions of the small intestine, and these to the abdominal wall. It was most marked in the pelvis, where one very acute angle of the small intestine was found, and where there were likewise bands, which would readily have strangulated portions of the bowel.

There can be little doubt that the abscess in this case originated in a perforating ulcer of the bowel.

The symptoms which gave rise to the belief in a malignant tumour, were the aspect and emaciation of

the patient, the obstinate constipation, and the tympanitic distension of the abdomen, which were supposed to arise from the pressure of the pelvic portion of the tumour on some part of the intestinal canal; while those who believed in the existence of a strangulated hernia, founded their belief on the sickness and constipation, the impulse on coughing, and the resonance on percussion, supposed to result from a portion of distended bowel. The grounds on which I decided that it was an abscess and not a strangulated hernia, were the evident fluctuation, the situation of the tumour, the previous existence of a tumour in the iliac fossa, its descent into the thigh while the patient was lying in bed, the tenderness on pressure unaccompanied by tension, the impulse communicated to it on coughing, and the action of the bowels from opium; while the presence of air in the sac distinctly negatived the hypothesis of its being a malignant tumour.

The post-mortem examination showed clearly that the constipation did not arise from the pressure of the tumour in the iliac fossa, as was supposed by some, or from strangulation of the gut, which was imagined by others, but from the diseased condition of the intestine itself. The action of the bowels under the influence of opium is remarkable and instructive, and places this case in the same category as certain other diseases and injuries of the bowels, in which opium acts as an aperient, while ordinary purgatives are rejected by vomiting.

In the last three cases we have seen abscesses mistaken for hernia and soft cancer. They sometimes simu-

late solid tumours; this happens when they are attended with much surrounding induration, without redness or increased heat of skin, as in certain psoas abscesses.

Case 48.—*Psoas abscess mistaken for a fatty tumour, and its removal attempted, with a fatal result.*—A delicate female, 23 years of age, came under my care at the Lincoln's-inn Public Dispensary, in November, 1842, for a tumour about the size of a swan's egg, situated at the upper, anterior, and internal part of the thigh. It was movable, apparently solid, somewhat irregular on its surface, and felt like a fatty tumour; it was free from pain on pressure, and the skin over it was of a natural colour. Several surgeons who saw it considered it to be a fatty tumour, and on this supposition the patient was admitted into one of our hospitals to have it removed. During the operation a sudden gush of matter took place; the surgeon, while detaching the supposed tumour from its surrounding connections, accidentally cut into it; it proved to be a psoas abscess, and the patient died a week afterwards.

Might this error of diagnosis have been avoided? With my present experience I venture to think it might; the mistake having evidently arisen from a too exclusive attention to the tumour, and neglect of some of the accompanying symptoms and history. The aspect of the patient was phthisical, her breathing was somewhat hurried, her pulse 120, and the spine and the abdomen were not examined; had they been, some tenderness and stiffness might probably have been discovered in

the former, and, possibly, fluctuation on deep pressure above Poupart's ligament, in the latter.

Section 3.—*On the Fluid Tumours of the Scrotum, Labium, and Perinæum.*

These parts are liable to general enlargement from inflammatory, urinary, dropsical, or sanguineous effusions into the areolar tissue, or from collections of the same in distinct cavities. The nature of the former is sufficiently obvious to the experienced surgeon, but I have seen young members of the profession mistake them for hydrocele and hernia; and even the celebrated Pott owns to having once committed the mistake of confounding an œdematous scrotum with hydrocele. The case was an exceptional one, and so peculiar, that it is worth transcribing.

Case 49.—*Œdema of the scrotum, mistaken for hydrocele.*—"A man, about 45 years old, who was a patient at St. Bartholomew's Hospital on another account, showed me a swelling on the left side of his scrotum. It was large, full, tight, and had all the symptoms and appearances of an hydrocele of the tunica vaginalis, viz. the fluctuation of the fluid, the freedom of the upper part of the process, and the concealment of the testicle. I thought myself so clear in the true nature of the disease that, without any scruple, I pierced it with a small

trocar in the lower and anterior part, and thereby let out about two ounces of limpid water, but could by no means draw off any more, though I pressed a probe up through the canula, and used every other proper means to obtain it. I withdrew the canula, and examined the swelling again, which was but little diminished by what had been done; but though it was not much decreased in size, it was considerably altered in appearance. I could now very plainly distinguish the testicle, and was convinced that the whole disease was confined to the cells of the dartos. In short, it was (what I had never seen before) an anasarca of that membrane on one side only, having a certain quantity of the water in one cyst or bag, and the rest diffused through the cells in the usual manner; the latter made all the tumefaction after tapping, and the former had concealed the testicle." *

The mode of distinguishing all these varieties of infiltration from hernia and hydrocele is, to pinch up the integuments between the fingers and thumb, when the enlargement will be felt to be grasped; in hernia and hydrocele it is not grasped, but lies behind the fingers; in these, neither pitting nor pain are produced by pressure; in those, either one or both these signs are present.

In inflamed hernia, as in inflamed testicle, the skin of the scrotum occasionally participates in the inflammation; but on making pressure, a painful resisting tumour is encountered, to which the pain is referred. If the skin be pinched up from off the tumour, it will be found

* Pott, op. cit., vol. ii, p. 220.

scarcely thickened, and only slightly sore. Again, it will be observed that the swelling is rarely limited to one of these regions; an infiltration of the perinæum, for example, will extend to the scrotum; an infiltration of the latter to the penis, or even the abdomen. Enlargements of the labia from this cause, if not part of a general dropsy, or caused by pressure on the veins by the gravid uterus, are nearly always inflammatory, the inflammation either originating in the part from specific or other causes, or being the result of injury, and in the latter case usually accompanied with ecchymosis. In hernia descending into the labium there is simple enlargement of the part, without œdema, inflammation, or ecchymosis.

Treatment of the above affections.—Simple dropsy may be relieved by a few punctures; diffuse inflammation, if violent and threatening gangrene, by free and deep incisions, as in cellulo-cutaneous erysipelas elsewhere; urinary infiltration or abscess, also by free incisions into the loaded areolar tissue; ecchymosis by discutient lotions.

The tumours which are formed by circumscribed collections of fluid in the scrotum, labium, and perinæum, are hydrocele, hæmatocele, serous and blood cysts, and chronic abscesses. For the diagnosis of ordinary hydrocele, and the mode of distinguishing it from an irreducible hernia, the reader is referred to page 55.

Congenital hydrocele, from its communicating with the abdominal cavity, and thus being reducible, bears a greater resemblance to hernia; but may be distinguished

from it, not only by the signs which characterise the non-congenital form; but by the gradual and noiseless way in which the fluid passes from one cavity to the other. Encysted hydrocele of the epididymis, is sometimes combined with vaginal hydrocele, constituting an irregular-shaped tumour, which resembles neither hernia nor hydrocele: irregularities in the shape of a hydrocele may also be brought about by partial thickenings of the tunica vaginalis, or by inflammatory adhesions between portions of its walls, or by vessels crossing and constricting it. In all such cases, if the existence of fluid is certain, it should be drawn off; this will leave the scrotum flaccid, and in a more favorable condition for examination. If the unusual form of the tumour was owing to the coexistence of an encysted hydrocele, a fluctuating tumour will be felt behind the testicle and connected with the epididymis, and the inguinal canal will be free; if it depended on the presence of a hernia, this, unless very large, would be situated above the testicle, and could be traced into the abdominal ring. Encysted hydrocele of the cord, combined with a vaginal hydrocele, is more likely to be mistaken for scrotal hernia than any of the before-mentioned varieties, on account of the simultaneous distension of the inguinal canal and scrotum. But besides the rareness of this combination, there would be present all those signs by which we distinguish these affections separately, and an absence of those which characterise hernia. It is not uncommon to meet with hydrocele and hernia on the same side, the latter being generally situated at a variable distance

above the hydrocele, but in large or old-standing herniæ descending behind it. These cases can be diagnosed, by observing that the symptoms are made up of those belonging to both affections — the occupation of the inguinal ring by a swelling, and the impulse on coughing characterising the hernia, and the fluctuation and translucency the hydrocele; if further evidence should be required, it may be supplied by the history and the exploring needle. The combination of a congenital hernia with a hydrocele, complicated still further by a diseased testicle, is related at page 59, and the means of diagnosing it illustrated.

Hæmatocele differs from hydrocele, in blood being the fluid which is effused into the tunica vaginalis, and its symptoms will differ from a hernia according as the latter is composed of bowel or omentum. In the former case the tumour would be lighter than a hæmatocele, resonant on percussion, and have an impulse on coughing; in the latter case, the tumour, although heavy, non-translucent, and dull on percussion, and therefore so far resembling a hæmatocele, would differ from the latter in its history, in its not fluctuating, and in its occupying the inguinal canal as well as the scrotum. This last symptom, however, requires investigation, because a hæmatocele, when large, will also extend into the canal, as we saw was the case with hydrocele under the same circumstances. As a further aid to the diagnosis of hydrocele, hæmatocele, and scrotal epiplocele, it should be borne in mind that hydrocele and scrotal epiplocele are essentially chronic affections; while hæma-

tocele is acute, and generally due to traumatic causes. An epiplocele would take some time to reach the bottom of the scrotum, and a hydrocele some time to reach the top, so as to distend the inguinal canal; a hæmatocele, on the contrary, commences at the bottom, and rapidly ascends till it reaches the inguinal canal.

Case 50.—A patient was admitted under the care of Dr. Radcliffe, on November 23rd, 1858, suffering from chronic bronchitis and ascites; he had also hydrocele of the left tunica vaginalis, and a varicose condition of the hæmorrhoidal veins and of the superficial veins of the leg. On December 7th, at the request of Dr. Radcliffe, I tapped the hydrocele, and drew off about twelve ounces of fluid. A week afterwards some blood was observed to come from the puncture, and the scrotum, which, after the operation, had much diminished in size, had become larger than it was before the tapping. Fœtid gas also escaped from the aperture on pressure. Under these circumstances, I made an incision an inch and a half long through the anterior wall of the scrotum, and turned out a large quantity of clotted and decomposed blood. This, and the application of ice to the scrotum, did not prevent the reaccumulation of the blood, which also became effused into the right vaginal sac, filling it to distension. The whole scrotum was now very large, and both inguinal canals very prominent, so that any one unacquainted with the case would, in all probability, have pronounced it a double scrotal rupture, which, indeed, it very much resembled. The sequel of this case is not less curious:—On December 26th the patient

died; but, three or four days previous to this event the scrotum had resumed its normal size and aspect, and the walls of the abdomen had become perfectly flaccid, all traces of fluid having disappeared both from the vaginal and peritoneal cavities. No post-mortem examination was permitted.

The cystic tumour of the scrotum is so rare, and so unlike any other disease of that part, that it is unnecessary to do more than allude to it; but cystic tumours of the labium are not uncommon, and sometimes very difficult to diagnose from hernia, especially the pudendal. From hernia generally they may be distinguished by their unvarying size, their being uninfluenced by the condition of the bowels, by their having no impulse communicated to them when the patient coughs, by the absence of gurgling when handled, by their irreducibility, and by their fluctuation. From the inguino-labial variety of hernia they differ in not occupying the inguinal canal, and from the pudendal in not extending upwards by the side of the vagina into the pelvis. If the hernial tumour should consist of a portion of the urinary bladder instead of intestine, cystocele as it is termed, its resemblance to an ordinary cyst is very close; but the latter cannot be emptied by pressure, whereas the former can, the act of pressure producing at the same time a desire to micturate, which the handling of a cyst does not give rise to. All doubts, however, on this point may be cleared up by desiring the patient to empty her bladder, and then refilling it with warm water; a mere cyst will remain unaffected by these

proceedings; a cystocele will partially disappear and reappear, or alter its dimensions under this treatment.

It sometimes happens that these cystic tumours of the labium are complicated by the presence of a hernia on the same side, as in the following case, which was rendered more obscure by the history the woman gave of the tumours. This history plainly pointed to the labium as the seat of the hernia, yet I ventured to act on the supposition that it was not one, and the event proved I was correct.

Case 51.—*Cystic tumour of the left labium, with a history of hernia.*—Anne S., æt. 34, married and healthy looking, was sent into the hospital in 1863, by Mr. Clarke of Luton, for two swellings affecting respectively the left labium and the left groin; they were soft and somewhat elastic, not painful, scarcely resonant on percussion, of natural colour, having a doubtful impulse communicated to them on coughing, and feeling like herniæ; the one in the groin like an enterocele, and that in the labium like an epiplocele, and having no communication with each other.

History.—This was extremely difficult to make out, owing to the extreme nervousness, slowness, and apparent want of intelligence of the patient; but it seemed that twelve weeks ago, having just lost an infant three weeks old, she walked over from Luton to Tancard (three miles), starting at 9 a.m. and returning at 7 p.m., having been walking about most of this time. On her way home she began to experience a bearing-down pain

at the lower part of the abdomen, "like a labour pain," and, on getting home, found the left labium enlarged. Went to bed and used hot-water fomentations to the part, and between 11 and 12 that night the swelling disappeared, but the pain "went up higher;" she was sick, and the bowels acted slightly. The following day (Tuesday) she remained in bed and took medicine, without relief; but on Wednesday there was a free action of the bowels, with complete relief to the pain. She remained, however, in bed till the following Monday, and then went about her duties as usual, wearing a truss to the groin which Mr. Clarke had supplied her with. On the Sunday after, while stooping down to put some coals into a pan, felt a sudden curious sensation in the same labium, as if something had given way, not attended with pain but with faintness. She was carried to bed, and the labium was again found enlarged to a greater degree than at first. Under the use of fomentations and rest in bed for some weeks, it gradually got smaller, till it attained its present dimensions. Mr. Clarke, she said, attributed these last symptoms to the rupture having escaped from under the pad of the truss, which he changed for a Mocmain; but, according to the woman's statement, the hernia in the groin to which the truss was applied, had existed for many years, and had never troubled her.

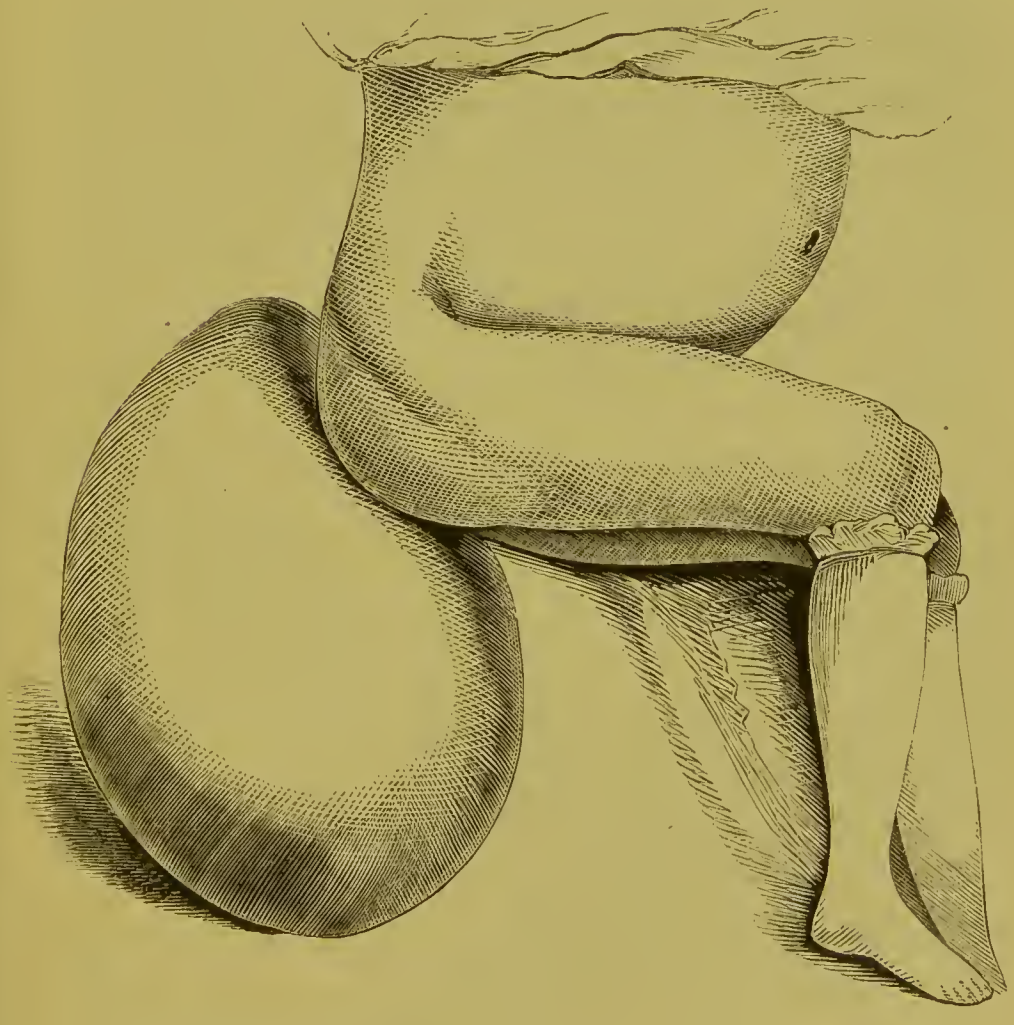
June 16th.—Made an incision on the inner side of left labium, and removed a tumour consisting of a bunch of small cysts, united together and enveloped in a sort of capsule of fibrous tissue, the feel being much like that of a piece of omentum.

July.—She left the hospital cured of the tumour in the labium; the small femoral hernia, if it be a hernia and not a cyst, remains as on her admission.

Perineal herniæ are rare, and seldom attain a great bulk; the largest which have been recorded have not exceeded the size of a hen's egg. Under these circumstances it seems extraordinary that the tumour about to be described should have been mistaken for a hernia by two of the most eminent surgeons of their day.

Case 52.—*Large cystic tumour of the perinæum, mistaken for a perineal tumour.*—The subject of this tumour was a female, æt. 48, married, and the mother of four children, the youngest of whom was ten years of age at the time of her death. The tumour was first observed about nine years previous to this event, and steadily increased in size till it attained the dimensions seen in the plate. Four or five years before the woman died she consulted Mr. Tebay, of Great Smith Street, Westminster (to whom I am indebted for these particulars, as well as for the opportunity of making the post-mortem examination), who considered the tumour to be a perineal hernia, and such was the opinion of some eminent surgeons to whom Mr. Tebay showed the case. At this time it was about the size of a child's head at the period of birth, having an elongated pedicle, by the side of which, and forming a part of it, was the rectum running straight down and terminating in the anus, just where

the pediele expanded into the tumour; it looked very much, Mr. Tebay says, like a child partly born, only the neck was longer and more slender than a child's neek. Beyond the inconvenience occasioned by the bulk and



weight of the tumour, it did not for some years interfere materially with the patient's well-being; the funetions of mieturition and defæcation were performed normally, and she menstruated regularly. Two or three days

before her death Mr. Tebay kindly invited me to see her; she was then emaciated and greatly exhausted, her abdomen was distended with fluid, and she was altogether too ill, considering I did not visit her in a professional capacity, to permit of my making an examination of the tumour. After death I obtained permission to take a cast of the tumour, and also to make a post-mortem examination of the body.

Post-mortem examination.—The vagina was situated in front of the pedicle of the tumour; several gallons of fluid were evacuated, and it was then discovered to be the upper or abdominal portion of a large cyst, the lower part of which, covered by skin, formed the pendulous tumour in the perinæum; the neck or constricted part corresponded with the outlet of the pelvis; thus it had somewhat an hour-glass shape, and the intra- and extra-abdominal portions freely communicated with each other through the central tabular pedicle, which admitted the hand and arm from the abdomen to the bottom of the perineal portion of the cyst. The origin and nature of the cyst could not be satisfactorily made out at the post-mortem examination. Its walls appeared to be continous with the peritoneum; it looked like an enormous diverticulum from this membrane, originating in some part of the pelvis, extending upwards towards the diaphragm, and forming the abdominal portion of the cyst, whilst the recto-vaginal pouch was prolonged downwards to the bottom of the perineal tumour, constituting, in fact, the lining membrane of that tumour, in the lower half of the cyst. The entire tumour was removed in two

parts by cutting through its pedicle; with the extra-pelvic portion was included about the lower third of the rectum; with the intra-pelvic portion were the urinary bladder and ureters, the uterus and its appendages, and a small portion of the vagina.

Further examination of the parts removed.—Connected with the fundus of the uterus was a pedunculated cystic tumour about the size of a goose's egg; the lower half of this was partly solid and partly cellular; the upper half entirely cystic, and filled with fluid. The uterus itself was healthy, as were likewise the Fallopian tubes and the ovaries and their ligaments. The right round ligament was much elongated, and the right broad ligament thin and sharp above, and including between its layers the above-named structures, appeared to expand below into the cyst. The walls of the abdominal portion of this cyst varied much in thickness, being in parts very thin and translucent, and in others having masses of solid substance included between them; its anterior was in parts slightly sacculated. The perineal portion of the cyst, though smooth and covered by skin externally, was sacculated within, there being one accessory pouch of some size communicating with the general cavity by a wide mouth. No solid masses were met with here, as in the abdominal portion of the tumour.

Blood cysts, or more properly speaking sanguineous effusions, in the region now under consideration, are either the result of direct violence, or are produced by the pressure of the child's head during labour, causing a

rupture of some vessel. The nature of these swellings is generally so obvious, that they can hardly be mistaken for anything but what they are. The sanguineous tumour of the labium has been mistaken for hernia on account of the suddenness of its appearance, during or shortly after labour; but the fact that it frequently involves both labia, comes on rapidly rather than suddenly, often attains a large size in a short time, and as it increases extends into the perineum and other contiguous parts, and, above all, the discoloration of the skin, are sufficient to distinguish it from any other tumour.

CHAPTER VI.

ON THE RADICAL CURE OF RUPTURES.

Among the most potent of the predisposing causes of hernia, must be reckoned a congenital weakness of the anterior wall of the abdomen in the region of the hernial outlets, and this may arise either from the patency, partial or complete, of the canal which originally transmitted the testis; or from defective development of the muscular or tendinous structures which constitute the wall in these regions; or from the large size of the femoral ring. If, with these congenital defects, causes should arise to bring into play the frequent or violent action of the abdominal muscles, such as chronic bronchitis, or stricture, or parturition; or should the individual be placed in such circumstances as to necessitate his making violent muscular efforts, as in lifting heavy weights, &c., a hernia is very likely to occur. When this has once formed, it has a constant tendency to increase in bulk; for the same causes which originally produced it continue in operation, and thus these tumours often acquire a large size. On the other hand, if mechanical appliances are early resorted to, a curative tendency seems to be at once established, and nature does her best to repair the

mischief. Hence most writers on hernia have remarked the constant tendency which the orifice of the sac has to contract, and even to become obliterated, as soon as the protrusion ceases to act upon it. Indeed in some cases, even where the sac is not empty, a spontaneous cure takes place, from inflammation gluing, as it were, together the sac and its contents, and thus effectually obliterating the communication with the abdominal cavity. With the knowledge of these facts, it is not surprising that surgeons should have attempted to imitate nature by artificially exciting the same processes, and the different operations for the radical cure of rupture, all have for their object the obliteration of the sac, either immediately by the adhesion of its walls, or mediately through the interposition of a plug.

It has been objected to these methods, that their action is only on the sac, while in truth something more is required. "When the ring has been dilated by the descent of the viscera," observes Lawrence, "we cannot reasonably expect that the mere closing of the sac will form a sufficient obstacle to a fresh protrusion; we want a remedy that should contract the tendinous opening, for while that remains preternaturally large, a new protrusion is a highly probable occurrence." There is, no doubt, much force in this objection, for the closure of the sac only, remedies but imperfectly those defects which we have seen to be the predisposing causes of this affection. In every hernia, too, of long standing, the canal has become much dilated, and its walls more or less flaccid; it has ceased to be a mere oblique inter-

muscular slit between the cutaneous and serous surfaces of the abdominal wall; an operation, therefore, to be effectual, should not only close the sac, but bring together and cause to adhere the sides of the canal, and thus strengthen the abdominal wall where strength is most needed; any operation then in which this important principle is overlooked, is very likely to fail. At the same time it must not be forgotten, that the adhesion of the opposed surfaces of the hernial sac, necessarily involves the drawing together of the walls of the canal to which its outer surface is adherent, and therefore does contract this passage, although the adhesion is certainly not so firm as that produced by the operations to be presently described. Instances again are not rare, in which the continuous pressure of a well-fitting truss, worn constantly, has effectually cured a recent hernia. In such cases, the instrument may possibly act in the same way as some of the operations alluded to, namely, by setting up such an amount of inflammation as shall bring about the obliteration of the sac, and its amalgamation with the walls of the inguinal canal. On the other hand, its action may be solely mechanical, and preventive of the protrusion, nature herself effecting the closure, on the principle of that inherent tendency of the tissues to perfect themselves after an injury; or possibly, cures may have been effected sometimes by one of these processes and sometimes by the other, or even by their joint influence. Whichever hypothesis we adopt, the deduction is obvious, namely, that nature requires but a

small amount of assistance from art in order to repair the defect of which we are treating.

The several methods of plugging the inguinal canal by an invaginated portion of the skin of the scrotum, as practised by Gerdy, Wutzer, Rothmund, and others, all labour under the defect of dilating rather than contracting this passage, and fail moreover, in securing adhesion between the contiguous surfaces of the plug and of the wall at their posterior aspect, so that a passage is still left open for the re-entrance of a hernia. Plugs too, thus artificially produced from below, differ from those omental ones to which allusion has been made, not merely by their adhering to a part only of the circumference of the inguinal canal, but by their not reaching sufficiently high to block up the internal abdominal ring, and by their tendency from mere gravity, aided by the pressure of the viscera above, to descend again to their original situation.

From the foregoing remarks then, it will be evident that the operations for the radical cure of hernia may be classed under two heads; first, those which act directly and almost solely on the sac, and but indirectly on the inguinal canal; and secondly, those which act equally on both. Under the first head, are included all those operations which have for their object the setting up a certain amount of inflammation in the sac, and so causing adhesion of its sides, as in that by seton. Cases are sometimes met with in which, owing to the smallness of the inguinal canal, the finger cannot satisfactorily make out the structures involved in the operations which I

shall have presently to speak of, and, under such circumstances, their performance cannot be altogether free from risk. For these the seton operation may be performed, and from my experience of it, derived, however, from a limited number of cases, I am disposed to regard it with more favour than is usually accorded to it. True, I have not done it of late years, but that is only because I have met with scarcely any cases that were not amenable to the superior operation by the rectangular pins, which act both on the sac and on the canal. The following, however, is an example of the seton operation.

Case 53.—G. E., æt. 17, was admitted into the Westminster Hospital, under my care, on the 23rd of July, 1860, for an oblique inguinal hernia, which had descended into the upper part of the scrotum, and had existed three months. It was easily reduced, and no truss had been worn for it. On the 31st of July, the bowels having been previously cleared by castor oil, a seton composed of eight threads of silk was drawn through the inguinal canal, the patient was put on low diet, and a grain of opium given at bedtime.

August 8th.—Seton removed, very little pain or suppuration having been caused by it. Has not had an unfavorable symptom, and looks and feels perfectly well. Middle diet, with half a pint of porter, was ordered, and a truss with a weak spring was applied.

10th.—Continues well: some tenderness is felt on pressure over the inguinal canal, and the truss causes aching of the part; it was therefore removed, with an

injunction to the patient to place his hand over the site of the internal ring during defæcation or straining.

21st.—Discharged cured, but wearing a weak truss. Wounds very nearly but not quite healed.

September 1st.—Presented himself at the hospital, the wounds being now quite healed. The truss was taken away.

October 13th.—Continues very well, and has gained flesh. He is working daily as a bricklayer's labourer, without a truss.

August 31st, 1861.—A month ago, or exactly one year after the performance of the operation, the rupture suddenly came down again, while he was making a violent muscular effort. He has been nearly constantly at work, and without a truss, ever since his discharge from the hospital.

Notwithstanding the hernia eventually returned in this case, the operation can scarcely be called an unsuccessful one. Indeed it appears extremely probable, that had the patient delayed going to work a little longer, or had he been in a station of life which called for less bodily exertion, there would have been no return of the rupture, and the operation would have been pronounced a success. This view is supported, not only by the cures resulting from the use of a truss only, and to which allusion has already been made, but by the following dissection of a case in which this principle of operating was adopted.

A German, 47 years of age, affected with a scrotal hernia of the right side, was operated on by Professor

Carnochan, after Riggs' method, on the 2nd of May, 1857; the operation was completely successful; towards the latter end of July, pulmonic symptoms made their appearance, and on the 9th of September, he died of tuberculosis of the lungs.

"*Post-mortem*, 10th September.—Upon opening the cavity of the peritoneum, the orifice to the hernial sac could not be traced, the internal ring being firmly closed around the cord. On the outer side of the peritoneum, and just below the situation of the internal ring, was found a small rounded body of a yellowish colour, supposed to have been the remains of the hernial sac. The *upper portion* of the inguinal canal, for nearly an inch, was closed by plastic exudation, which had become organized and somewhat fibrinous in its appearance; while the canal at its lower part, and the external ring, were, to appearance, in their normal condition, though the cord, throughout the entire length of the canal, seemed to be imbedded in plastic formation.

"The skein of silk used in this case being too large for the puncture made by the instrument, it was not introduced more than one inch, which will explain the facts mentioned, of the lower portion of the canal and external ring being in their normal condition; while, at its upper portion, both the canal and internal ring were firmly closed."

In explanation, it should be mentioned that Riggs' operation is identical in principle with the seton operation, sponge being substituted for the silk used in the latter. The mode in which to perform the seton ope-

ration is the following:—A fold of scrotum is carried up on the forefinger as high into the inguinal canal as possible; a strong curved needle set in a handle, and having a large eye near its extremity, is next passed along the palmar aspect of the finger, thrust through the anterior wall of the canal, and brought out on the surface, about half an inch or more above the centre of Poupart's ligament; it is then threaded with the number of threads previously determined on, and medicated or not, as the case may be, and withdrawn through the same opening at which it was entered. The upper and lower ends of the threads are tied together, and pressure made over the outside of the canal with a compress and bandage. The threads are allowed to remain in the canal till a sufficient amount of inflammation appears to have been excited, and are then withdrawn at periods varying from three to nine days.

I now come to those operations which have for their object the closing up or contraction of the inguinal canal, as distinguished from the mere occlusion of the hernial sac, and for which the profession is indebted to Mr. John Wood. This is effected, in small herniæ and in children, by pinning together the walls of the canal, including or not a portion of the sac, by rectangular pins; these subserve also the further purpose of a seton, viz. that of setting up a sufficient amount of inflammation to cause adhesion of the sides of the canal and obliteration of the hernial sac, while the material employed is in every respect superior to silk, or any vegetable fibre. In larger or old standing herniæ, the following

operation by wire is preferable, which I shall now proceed to describe in the words of its inventor.

"The *instruments* used in performing it are, *First*,—a stout, unyielding needle, mounted in a strong handle, with a blade much curved near the shaft, and less so near the point; so as to lie conveniently in the curve of the forefinger. The point is blunt, with tapering, wedge-shaped shoulders; formed, not to cut, but to split its way through the tendons. Near the point, the concave surface is flat horizontally, so as to take up readily a layer of tissue; while the convex part is rounded off laterally, so as to slide easily along without danger of puncturing the finger of the operator. Towards the handle, the blade is thicker in the opposite diameter, and more sharply curved than near the point; giving it more resisting power, and a tendency to come short up to the surface when pushed far into the tissues. The handle is long and stout; giving a good leverage to the operator, and enabling him to control the point with greater facility.

Second.—A small knife, with a blade resembling a tenotomy knife; the point sharp and lancet-shaped; the edge cutting only for an inch near the point; and a stout back. The handle should be thinned off at the end, so as to make a rounded edge like that of a paper-knife. This instrument is used for the purpose of making the preliminary scrotal incision, and separating the fascia from the skin.

Third.—A piece of *stout copper wire silvered*, about two feet long. The wire should be as thick as may be consistent with tolerable flexibility. The advantages of having the wire thick are—that a fine wire cuts the tendinous structures when drawn tight, acting like a tenotomy knife upon their tense fibres, so that these important tissues become set free from its grasp, instead of being held firm in their new position until made adherent by the slower process of ulceration. A thick wire also, when twisted, carries round with it, not only the included parts, but also the deeper structures attached to them; so that all the structures near the parts immediately traversed by the wire are dragged and twisted up more or less, so as to complete the entire closure of that part of the hernial passage which is not included in the

grasp of the ligature. A thick wire also retains its form with more tenacity, and holds the openings which it traverses more in a line with each other; so that any discharge which may form escapes from the wire track with more facility, its passage being more direct and less obstructed. Copper wire is better than silver, because it is stronger, more tenacious, and not so liable to form kinks and break off;—it is better than iron, because at the proper thickness it is more flexible. Any disadvantages possessed by a thick wire are experienced at its bend in the eye of the needle. If the doubled wire be as thick as the needle itself, the bend will not pass through the needle track with the point. The needle used in this operation, however, should be so thick as to be perfectly unyielding. Its broad blade will open a track sufficiently large to receive back with ease the point with the wire attached. Any little hitch will be readily overcome by withdrawing the needle with a rapid motion, accompanied by a slight jerk. In many instances, I have had the wire thinned down at the ends by gradations, made by passing them through the diminishing holes of the draw-plate for about six inches at each end. In some of the trials, however, the shoulders thus left on the wire were arrested in some part of the track, and the wire broke off—an awkward accident, necessitating a fresh application of the needle. Upon the whole, it is better to trust to a thick, stout needle with the eye grooved, and a wire of a degree of thickness limited only by convenient flexibility, and undiminished at the extremities. No. 20 is the degree of thickness I have generally used.

In preparing the wire for this operation, it should be drawn rapidly several times through a woollen cloth, so as to clean it perfectly, straighten it out, and by the heat of the friction to render it a little more flexible. About half an inch at each end of the wire should be carefully bent into a hook, sufficiently round to render its passage through the eye of the needle easy, and quite free from side twists. The wire should be then well oiled, folded in the middle, and given in charge of an assistant to keep it unaltered in form.

The Operation.—The patient being placed under chloroform, and the pubis and scrotum of the affected side cleanly shaved, he is

laid upon his back with the shoulders well raised. The surgeon will find it most convenient to stand on the side to be operated on, and to use for the purpose of invagination the forefinger of the right hand for the right side of the patient, and *vice versa*.

The rupture being carefully and completely reduced, the finger is first passed into the canal by invaginating the scrotum pretty low down, to ensure a complete absence of the viscera from the sac, and to investigate the boundaries and peculiarities of the hernial passage. If the patient have a tendency to cough or struggle, or the hernia is easily protruded, an assistant must carefully command, by pressure, the internal opening during the preliminary incisions.

An incision is first made in the skin of the scrotum, over the fundus of the sac if the rupture be large, and a little below it if small. The most convenient direction of the incision for the future steps of the operation is obliquely downwards and outwards, terminating a little on the outer side of the scrotum. It should be long enough to admit easily the point of the finger with the needle in addition. If the rupture operated on be a bubonocele, the point chosen for the scrotal incision should be $1\frac{1}{2}$ inches below the spine of the pubis. Then the knife, being insinuated flatwise between the skin and fascia for about an inch, is to be carried round the edges of the incision, so as to separate the former from the latter over an area of at least two inches in diameter. More than this will be required if the rupture be a very large one. The thin end of the handle of the knife will suffice to separate the loose connections of the scrotal fascia to any extent that may be required, in ordinary cases.

Next, the knees of the patient should be brought together and bent up so as to relax the structures in the groin.

The operator's forefinger is then passed, with the nail directed backwards, into the scrotal aperture, and made to invaginate the detached fascia into the inguinal canal. This invagination should be commenced at as low a point as possible, so as to force the finger as much as may be behind the hernial sac, between its fundus and the spermatic cord. The latter may, at this time, be steadied by an assistant making gentle traction upon the testis. The invaginating finger should be made to reach as high as possible in the canal, towards its superior opening. The position of

the cord and of Poupart's ligament should then be distinctly made out. Then, by hooking forward the finger well towards the surface, the lower border of the internal oblique muscle will be felt raised upon it. This may be more distinctly recognised by placing the other hand upon the surface of the groin, when the thicker portion of the deep-seated structures in front of the rupture will be felt between the fingers. By directing the finger inwards, the operator will now feel at its thumb side the edge of the conjoined tendon raised with the muscle, and placed in relief on the posterior wall of the canal.

The needle, unarmed and well oiled, is then passed along the same side of the finger, and pushed through the tendon at its most salient part, so as to take up a considerable portion of it. It is then turned towards the surface, traversing the internal pillar of the superficial ring obliquely upwards and inwards, till the point is seen to raise the skin of the groin. In these manœuvres the point of the needle should be carefully preceded and covered by that of the finger. The skin is then drawn inwards and a little upwards, as much as its deep attachments will allow, and the needle pushed through it. One end of the prepared wire is then hooked on to the eye of the needle, care being taken that it fits fairly into the groove, and the instrument is then withdrawn rapidly and with a slight jerk through the tissues, drawing the wire after it.

The needle is then disengaged, and passed upon the finger to its outer side as high up as the internal opening of the hernia, opposite which it is pushed through the anterior aponeurosis close to Poupart's ligament. It is then turned so as to traverse the same cutaneous aperture through which the wire has already passed, which is to be drawn upwards and outwards to meet it. The opposite end of the wire is then hooked on, drawn through the puncture after the needle into the scrotal aperture, and then disengaged as before.

At this stage of the operation the two ends of the wire emerge together at the lower or scrotal aperture, after traversing the conjoined tendon and internal pillar on the inner side and Poupart's ligament at the outer side respectively; while the loop which connects them emerges at the upper or groin puncture.

The sac of the hernia and the fascia covering it opposite the

scrotal aperture is then pinched up between the finger and thumb, and the spermatic cord is slipped back from their grasp, in the same way as in the operation for tying the veins in varicocele. The needle is then passed from without inwards and a little upwards, in the direction of the incision across the scrotum, close to and in front of the spermatic cord. A slight twist given to the point of the needle will enable it to take up all the structures which lie in front of the spermatic cord, and at the same time to enter and emerge entirely within the limits of the scrotal incision. The curve of the blade and the extensibility of the scrotal tissues will permit this to be done easily, without making a fresh cutaneous puncture. If this be accidentally done, however, the incision may be extended so far as to meet the new puncture. One of the ends of the wire is then again hooked on to the needle, and drawn with it across the cord through or behind the sac, traversing the scrotal fascia. I have usually been in the habit of drawing that end of the wire which has already traversed the conjoined tendon through the scrotal portion of the sac, as being better placed, when drawn up, for making pressure upon the deeper parts of the canal, and more easily withdrawn afterwards. Either end, however, may be taken, the outer end having another recommendation of giving an extra twist to the sac when drawn up and tightened.

If the sac is small and recent, reaching only as far as the scrotal aperture, the wire may be thus placed entirely behind it, and between it and the cord. But if the sac be larger, and of long standing, its close adhesion to the cord will hardly permit this to be done, and it is unavoidably punctured posteriorly.

In still smaller cases, wherein the sac does not descend much beyond the external ring, the last step of transfixing the fascia must be performed nearer to the insertion of the pillars of the ring.

In accomplishing this manœuvre, the needle may also be made to take up a portion of the pillars themselves close to their respective insertions on the inside of the spermatic cord. The crest of the pubis will afford a good guide and protection to the deeper parts, the point of the needle being made to slide close to the bone. This additional precaution is very desirable in large cases

of inguinal hernia occurring in females, in whom there is not much fascia capable of being invaginated at this point.

In some very small cases, both in male and female subjects, this last transfixion of the fascia or pillars by the needle may be altogether dispensed with; as any great amount of permanent invagination of the sac or fascia is not necessary to fill up a narrow hernial canal when drawn together by the suture. In some small female cases, a simple incision over the superficial ring, without any separation of fascia, will suffice to apply the necessary sutures with accuracy, and to afford a free escape for the discharges.

The next step in the operation is to straighten, stretch, and draw down both ends of the wire, until the loop above is close to the skin. Here it is held by the finger of an assistant while the surgeon twists the ends round each other, giving them three or four turns. This manœuvre twists also the enclosed sac and fascia which are held between the ends of the wire.

Next, the loop is drawn steadily upwards so as to invaginate the twisted sac and scrotal fascia firmly into the hernial canal, stretching them as far up as possible towards its deep opening. The loop is then, in its turn, twisted well down into the upper or groin puncture, giving it the same number of turns. The forefinger of the operator should now be placed in the scrotal puncture to ascertain whether a satisfactory closure of the superficial ring has followed the tightening of the wire. The effect of traction on the wire upon the posterior wall can also be distinguished. Great care should also be taken that the skin of the scrotum is not drawn upwards between the pillars of the ring, so as to prevent their direct union.

The projecting ends of the wire are then cut off by pliers about three inches from the surface; and both together bent into a hook, which is carried upwards to meet the loop curved down to receive it, till the two are locked together, and form an arch over the intervening skin.

A pad of lint, rolled tightly up to a size sufficient to fill up the interval between the arch of wire and the skin, is then placed under it between the punctures. A broad spica bandage is then placed over all, so as to make firm compression upon the wire steadied by the pad of lint.

In male cases, it is advisable to ascertain that the cord is moveable behind the lower twist of wire, and not included in its grasp. It should also be ascertained that the superficial ring is entirely closed up by the tightening of the wires.

In large scrotal herniæ, the testis on the side operated on will be more or less drawn up towards the ring.

When the patient is removed to bed, care should be taken to keep the abdominal structures relaxed, by raising the shoulders and placing the knees bent over a bolster. The scrotum may be supported by a small cushion covered with gutta percha skin. As a support to the testes, I have been in the habit of employing a long and broad strip of common adhesive plaster, carried across the upper parts of both thighs, and passing behind the scrotum. This is not so likely to permit the scrotum to slip down as the piece of wood used by Ricord as a support. Attention to this point will obviate any bad consequences in the way of swelling and pocketing of matter, which might follow a dragging and dependent condition of the testis.

A slight enlargement of the testis on the affected side, coming on in twenty-four or forty-eight hours after the operation, is a satisfactory indication, showing a sufficiently close embrace of the substance of the cord, and a sufficient pressure upon that part of the sac which immediately invests it, as well as upon the posterior wall of the canal. If this swelling be great, or there is much pain in the gland, the spica bandage may be removed after twenty-four hours' application. Generally, however, it will not be found necessary to remove it till the third day. General abdominal uneasiness may also necessitate its removal. To this, the application of a hot fomentation flannel will usually give immediate relief.

The after treatment consists simply in giving opium in some form, as often as pain or restlessness renders it advisable. Patients differ much in this respect. For the most part, they suffer hardly any pain after the first twelve hours. In some cases they are restless, and complain of the tightness of the bandage, of flying pains in the abdomen, and of a flatulent condition of the bowels. No tenderness on pressure upon the abdomen is, however, experienced, pressure rather giving relief. Sometimes pain

is complained of along the iliac crest, which I attribute to the pressure upon the small ilio-inguinal nerve, by the ligature enclosing it. Five grains of pil. sapon. co. given soon after the operation, and repeated every night at bed time, or as often as rendered advisable by the pain, is the usual treatment I have pursued, with hot fomentations in some of the cases.

It is important in the after treatment of these cases not to keep the patient *too low*, as we thereby diminish the power of reparation on which so much of the permanency of the cure depends. The diet should be mild and unstimulating, and taken more freely when the patient feels inclined to eat it. To begin with a milk diet is best, with strong beef-tea ad libitum, and two eggs daily.

If the bowels have been properly cleared before the operation by a mild dose of castor oil, and the diet thus carefully regulated, it is better to leave them to their normal action afterwards than to irritate them by purgatives. If moved within the first three or four days it will be sufficient. If not, and the patient complains of distension, a tablespoonful of castor oil will be found to make him more comfortable.

After the bowels have been opened, the patient is generally allowed to have a slice of meat or a chop, if he can eat it; but no vegetables, until a longer time has elapsed, and the wound is fairly healing. If the latter process be somewhat sluggish, six ounces of wine daily will be beneficial. If the patient have been previously accustomed to stimuli, this may be increased to eight or ten ounces.

The wire usually gives rise to very little irritation or suppuration, and may be kept "in situ" much longer than threads, which seem by their retention of putrid or decomposing matter to cause more suppuration in the wound.

In the course of the first week, when the tumefaction of the more superficial parts has subsided, and the discharge, after being serous, has become purulent, evidences of thickening and consolidation of the transplanted tissues within the canal become distinct.

The effective effusion in the canal may be distinguished from an exudation into the superficial tissues, by the skin being move-

able over it as freely as over the surrounding parts. In a short time, the effusion becomes so large and hard, that it may be held between the finger and thumb, and felt to be deep-seated behind the aponeurosis of the external oblique.

I have generally untwisted the wire about the eighth or tenth day, and removed it altogether about the fourteenth. In cases where the amount of solid effusion seemed to be less than usual and slow to form, I have kept it in as long as twenty-one days with benefit. Its withdrawal has rarely given much trouble, and but a small amount of pain. By acquiring the habit of giving the twist to the wire always in one direction, and counting the turns, it becomes easy to untwist in the opposite direction, and with the same number of turns reversed. The track in which it lies in the tissues is usually so much enlarged by ulceration as to permit of the wire to pass with slight traction, although one or two of the irregularities caused by the twisting may remain on it. The two wire tracks are usually, at this time, blended into one by ulceration of the intervening parts, and the wires may be felt rubbing against each other in their whole length. In large cases, where they are widely separated, this may not be the case. The movements of the two ends on each other will indicate their freedom from each other's embrace. It has usually been necessary to untwist only the lower ends of the wire; the loop and the upper twist generally coming away unaltered by upward traction. It is better always to draw the wires out upwards, if possible, to avoid the chance of tearing downwards the new adhesions of the invaginated fascia. In one or two cases only, it has been necessary to divide the wire at the loop, and to draw out the two portions separately; or to stretch the wire straighter by forcible traction at both ends previous to withdrawing it.

After the wire is withdrawn, the groin in the neighbourhood of the puncture must be compressed gently every day, to free the deeper parts of the wire track from pus. This must be done carefully, by pressing the groin deeply in a direction towards the puncture on each side, so as to get the pressure behind the wound as much as possible. The fistulous track may be afterwards washed out every day with zinc lotion. In some cases, where the granulations appeared weak and relaxed, I have used a solution

of tannin, and also a lotion of the muriated tincture of iron, with great benefit. The tissues were rendered firmer and harder, and the tendency to their suppuration checked. I have thought that, in these cases, the succeeding induration was harder and more enduring. The upper puncture is usually the first to close, the lower acting for some time longer as a drain to carry off the discharges. This usually takes place in the third week, when a spica bandage and a pad of good size may be applied firmly, and the patient allowed to get up and walk about his room. As soon as the parts will bear it, a light truss of the proper shape may be worn without waiting for the complete healing of the lower wound."

The circumstances which call for one or other of the preceding operations are various and manifold—the desire of the patient to get rid of an annoying infirmity—the difficulty, in many cases, of procuring a truss which will effectually keep up the protrusion—its liability to become strangulated, and so to jeopardise the patient's life—its rendering the individual ineligible for certain callings for which he may have a bent—and lastly, the belief, although unfounded, that the infirmity in question interferes in some way with the procreative functions. In any of the above circumstances, provided there are no contra-indications, an operation may be fairly recommended, the only valid objections that can be raised to this proceeding being on the score either of danger or of inefficiency, for the pain is so trifling that it can scarcely be taken into account. And first as regards danger, Mr. Wood, who has performed the operation more frequently than any surgeon in this country, has lost only one case, and that was at an early period of his ope-

rations, before he had substituted wire for thread. Of the smaller number which have been operated on by myself, none have died, nor have any symptoms arisen, except in one case, to cause even momentary anxiety. As respects efficiency, when proper subjects are selected, the success is quite as great as, if not more so than, in most operations of like magnitude; and even if perfect success be not attained, it is rare that the patient is not improved by the operation, for it is a certain gain if it succeed only so far as to render a truss available, which before would not keep up the rupture. To prevent failure, some discrimination is necessary, both as to the proper subjects to be operated on and the kind of operation to be selected; very old, very young, and very fat persons, should be rejected, for the reparative powers are too feeble in the first, and the hernial apertures too small to be satisfactorily explored in the second, while the depth of the parts, together with the weight of the viscera, both render the operation more difficult, and the strain on the newly-formed adhesions greater, in the third.

The state of the health is another element to be taken into consideration before undertaking the operation. It seems scarcely necessary to remark, that the nearer an individual approximates to the true standard of health, the better will he be capable of undergoing an operation, and the less will he be liable to suffer from any collateral risks. A person therefore who is already in the enjoyment of his accustomed health, and who considers himself well, will not require to undergo any preliminary treat-

ment, beyond the exhibition of an aperient on the morning of or the night preceding the operation; this I think advisable, because it diminishes the volume of the intestines, and thus renders the wall of the abdomen more flaccid and the operation more easy of execution; it also anticipates any ill effects that might arise from the constipation which usually follows the operation. The diseases which would seem more specially to contra-indicate operative measures, are all those which call into powerful action the expiratory muscles, as bronchitis, asthma, dysentery, stricture of the rectum or of the urethra, and so forth.

With reference to the kind of operation to be selected, that of course must be left to the judgment of the surgeon, who will be guided in his choice, mainly by the circumstances already pointed out at pages 150 and 154. It remains only to add, that the great mortality of persons affected with hernia, independent of the deaths arising from strangulation, is such as fully to justify the trial of any rational means which are calculated to reduce it; and my own opinions on this subject so entirely accord with those which have been so well expressed by Mr. Spencer Wells, that I cannot do better than quote his own words.

"The relief of a strangulated hernia is justly regarded as one of the noblest triumphs of operative surgery. The surgeon saves the life of the patient without removing or deforming any part of the body. But the surgeon who cures hernia radically with certainty and safety, is a

greater public benefactor, as he not only relieves large numbers of his fellow-creatures from suffering, and the inconvenience of wearing a truss, but he averts the danger of strangulation to which they are continually exposed, in a greater or less degree, through every period of life."

PRINTED BY
J. E. ADLARD, BARTHOLOMEW CLOSE, E.C.

London, New Burlington Street,
April, 1870.

MESSRS. CHURCHILL & SONS'

Publications,

IN

MEDICINE

AND THE VARIOUS BRANCHES OF

NATURAL SCIENCE.

"It would be unjust to conclude this notice without saying a few words in favour of Mr. Churchill, from whom the profession is receiving, it may be truly said, the most beautiful series of Illustrated Medical Works which has ever been published."—*Lancet.*

"All the publications of Mr. Churchill are prepared with so much taste and neatness, that it is superfluous to speak of them in terms of commendation."—*Edinburgh Medical and Surgical Journal.*

"No one is more distinguished for the elegance and *recherché* style of his publications than Mr. Churchill."—*Provincial Medical Journal.*

"The name of Churchill has long been a guarantee for the excellence of illustrated works, and it would be superfluous to repeat the admiration that we have several times expressed in this respect, of the spirit with which this firm engages in these costly but valuable series."—*Medical Press and Circular.*

"The typography, illustrations, and getting up are, in all Mr. Churchill's publications, most beautiful."—*Monthly Journal of Medical Science.*

"Mr. Churchill's illustrated works are among the best that emanate from the Medical Press."—*Medical Times.*

"We have before called the attention of both students and practitioners to the great advantage which Mr. Churchill has conferred on the profession, in the issue, at such a moderate cost, of works so highly creditable in point of artistic execution and scientific merit."—*Dublin Quarterly Journal.*

A CLASSIFIED INDEX

TO

MESSRS. CHURCHILL & SONS' CATALOGUE.

ANATOMY.

CHEMISTRY.

CLIMATE.

DEFORMITIES, &c.

GENERATIVE ORGANS, Diseases of, and SYPHILIS.

HYGIENE.

MATERIA MEDICA and PHARMACY.

MATERIA MEDICA and PHARMACY—*continued.*

MEDICINE.

MEDICINE—*continued.*

MICROSCOPE.

MISCELLANEOUS.

NERVOUS DISORDERS AND INDIGESTION.

OBSTETRICS.

OPHTHALMOLOGY.

PHYSIOLOGY.

PSYCHOLOGY.

PULMONARY and CHEST DISEASES, &c.

RENAL and URINARY DISEASES.

SCIENCE.

WILLIAM ACTON, M.R.C.S.

I.

A PRACTICAL TREATISE ON DISEASES OF THE URINARY AND GENERATIVE ORGANS IN BOTH SEXES. Third Edition. 8vo. cloth, £1. 1*s*. With Plates, £1. 11*s*. 6*d*. The Plates alone, limp cloth, 10*s*. 6*d*.

II.

THE FUNCTIONS AND DISORDERS OF THE REPRODUCTIVE ORGANS IN CHILDHOOD, YOUTH, ADULT AGE, AND ADVANCED LIFE, considered in their Physiological, Social, and Moral Relations. Fourth Edition. 8vo. cloth, 10*s*. 6*d*.

III.

PROSTITUTION: Considered in its Moral, Social, and Sanitary Aspects, Second Edition, enlarged. 8vo. cloth, 12*s*.

ROBERT ADAMS, A.M., C.M., M.D.

A TREATISE ON RHEUMATIC GOUT; OR, CHRONIC RHEUMATIC ARTHRITIS. 8vo. cloth, with a Quarto Atlas of Plates, 21*s*.

WILLIAM ADAMS, F.R.C.S.

I.

ON THE PATHOLOGY AND TREATMENT OF LATERAL AND OTHER FORMS OF CURVATURE OF THE SPINE. With Plates. 8vo. cloth, 10*s*. 6*d*.

II.

CLUBFOOT: its Causes, Pathology, and Treatment. Jacksonian Prize Essay for 1864. With 100 Engravings. 8vo. cloth, 12*s*.

III.

ON THE REPARATIVE PROCESS IN HUMAN TENDONS AFTER SUBCUTANEOUS DIVISION FOR THE CURE OF DEFORMITIES. With Plates. 8vo. cloth, 6*s*.

IV.

SKETCH OF THE PRINCIPLES AND PRACTICE OF SUBCUTANEOUS SURGERY. 8vo. cloth, 2*s*. 6*d*.

WILLIAM ADDISON, F.R.C.P., F.R.S.

I.

CELL THERAPEUTICS. 8vo. cloth, 4*s*.

II.

ON HEALTHY AND DISEASED STRUCTURE, AND THE TRUE PRINCIPLES OF TREATMENT FOR THE CURE OF DISEASE, ESPECIALLY CONSUMPTION AND SCROFULA, founded on MICROSCOPICAL ANALYSIS. 8vo. cloth, 12*s*.

C. J. B. ALDIS, M.D., F.R.C.P.

AN INTRODUCTION TO HOSPITAL PRACTICE IN VARIOUS COMPLAINTS; with Remarks on their Pathology and Treatment. 8vo. cloth, 5*s*. 6*d*.

SOMERVILLE SCOTT ALISON, M.D.EDIN., F.R.C.P.

THE PHYSICAL EXAMINATION OF THE CHEST IN PULMONARY CONSUMPTION, AND ITS INTERCURRENT DISEASES. With Engravings. 8vo. cloth, 12*s*.

JULIUS ALTHAUS, M.D., M.R.C.P.

ON EPILEPSY, HYSTERIA, AND ATAXY. Cr. 8vo. cloth, 4*s*.

THE ANATOMICAL REMEMBRANCER; OR, COMPLETE POCKET ANATOMIST. Sixth Edition, carefully Revised. 32mo. cloth, 3*s*. 6*d*.

MOCALL ANDERSON, M.D., F.F.P.S.

I.

THE PARASITIC AFFECTIONS OF THE SKIN. Second Edition. With Engravings. 8vo. cloth, 7*s*. 6*d*.

II.

ECZEMA. Second Edition. 8vo. cloth, 6*s*.

III.

PSORIASIS AND LEPRA. With Chromo-lithograph. 8vo. cloth, 5*s*.

ANDREW ANDERSON, M.D.

TEN LECTURES INTRODUCTORY TO THE STUDY OF FEVER. Post 8vo. cloth, 5*s*.

J. T. ARLIDGE, M.D.LOND., F.R.C.P.

ON THE STATE OF LUNACY AND THE LEGAL PROVISION FOR THE INSANE; with Observations on the Construction and Organisation of Asylums. 8vo. cloth, 7*s*.

ALEXANDER ARMSTRONG, M.D., F.R.C.P., R.N.

OBSERVATIONS ON NAVAL HYGIENE AND SCURVY. More particularly as the latter appeared during a Polar Voyage. 8vo. cloth, 5*s*.

T. J. ASHTON, M.R.C.S.

I.

ON THE DISEASES, INJURIES, AND MALFORMATIONS OF THE RECTUM AND ANUS. Fourth Edition. 8vo. cloth, 8*s*.

II.

PROLAPSUS, FISTULA IN ANO, AND OTHER DISEASES OF THE RECTUM; their Pathology and Treatment. Third Edition. Post 8vo. cloth, 3*s*. 6*d*.

THOS. J. AUSTIN, M.R.C.S.ENG.

A PRACTICAL ACCOUNT OF GENERAL PARALYSIS: Its Mental and Physical Symptoms, Statistics, Causes, Seat, and Treatment. 8vo. cloth, 6*s*.

THOMAS BALLARD, M.D.

A NEW AND RATIONAL EXPLANATION OF THE DISEASES PECULIAR TO INFANTS AND MOTHERS; with obvious Suggestions for their Prevention and Cure. Post 8vo. cloth, 4*s*. 6*d*.

A. W. BARCLAY, M.D., F.R.C.P.

I.

A MANUAL OF MEDICAL DIAGNOSIS. Second Edition. Foolscap 8vo. cloth, 8*s.* 6*d.*

II.

MEDICAL ERRORS.—Fallacies connected with the Application of the Inductive Method of Reasoning to the Science of Medicine. Post 8vo. cloth, 5*s.*

III.

GOUT AND RHEUMATISM IN RELATION TO DISEASE OF THE HEART. Post 8vo. cloth, 5*s.*

G. H. BARLOW, M.D., F.R.C.P.

A MANUAL OF THE PRACTICE OF MEDICINE. Second Edition. Fcap. 8vo. cloth, 12*s.* 6*d.*

ROBERT BARNES, M.D., F.R.C.P.

LECTURES ON OBSTETRIC OPERATIONS, INCLUDING THE TREATMENT OF HÆMORRHAGE, and forming a Guide to the Management of Difficult Labour. With nearly 100 Engravings. 8vo. cloth, 15*s.*

E. BASCOME, M.D.

A HISTORY OF EPIDEMIC PESTILENCES, FROM THE EARLIEST AGES. 8vo. cloth, 8*s.*

W. R. BASHAM, M.D., F.R.C.P.

I.

RENAL DISEASES; a CLINICAL GUIDE to their DIAGNOSIS and TREATMENT. 8vo. cloth, 7*s.*

II.

ON DROPSY, AND ITS CONNECTION WITH DISEASES OF THE KIDNEYS, HEART, LUNGS AND LIVER. With 16 Plates. Third Edition. 8vo. cloth, 12*s.* 6*d.*

H. F. BAXTER, M.R.C.S.L.

ON ORGANIC POLARITY; showing a Connexion to exist between Organic Forces and Ordinary Polar Forces. Crown 8vo. cloth, 5*s.*

LIONEL J. BEALE, M.R.C.S.

THE LAWS OF HEALTH IN THEIR RELATIONS TO MIND AND BODY. A Series of Letters from an Old Practitioner to a Patient. Post 8vo. cloth, 7*s.* 6*d.*

LIONEL S. BEALE, M.B., F.R.S., F.R.C.P.

I.

ON KIDNEY DISEASES, URINARY DEPOSITS, AND CALCULOUS DISORDERS. Third Edition, much Enlarged. With 70 Plates. 8vo. cloth, 25*s.*

II.

THE MICROSCOPE, IN ITS APPLICATION TO PRACTICAL MEDICINE. Third Edition. With 58 Plates. 8vo. cloth, 16*s.*

III.

PROTOPLASM; OR, LIFE, MATTER AND MIND. Second Edition. With 8 Plates. Crown 8vo. cloth, 6*s.* 6*d.*

HENRY BEASLEY.

I.

THE BOOK OF PRESCRIPTIONS; containing 3000 Prescriptions. Collected from the Practice of the most eminent Physicians and Surgeons, English and Foreign. Third Edition. 18mo. cloth, 6*s*.

II.

THE DRUGGIST'S GENERAL RECEIPT-BOOK: comprising a copious Veterinary Formulary and Table of Veterinary Materia Medica; Patent and Proprietary Medicines, Druggists' Nostrums, &c.; Perfumery, Skin Cosmetics, Hair Cosmetics, and Teeth Cosmetics; Bevcrages, Dietetic Articles, and Condiments; Trade Chemicals, Miscellaneous Preparations and Compounds used in the Arts, &c.; with useful Memoranda and Tables. Sixth Edition. 18mo. cloth, 6*s*.

III.

THE POCKET FORMULARY AND SYNOPSIS OF THE BRITISH AND FOREIGN PHARMACOPŒIAS; comprising standard and approved Formulæ for the Preparations and Compounds employed in Medical Practice. Eighth Edition, corrected and enlarged. 18mo. cloth, 6*s*.

HENRY BENNET, M.D.

I.

A PRACTICAL TREATISE ON UTERINE DISEASES. Fourth Edition, revised, with Additions. 8vo. cloth, 16*s*.

II.

WINTER AND SPRING ON THE SHORES OF THE MEDITERRANEAN: OR, THE RIVIERA, MENTONE, ITALY, CORSICA, SICILY, ALGERIA, SPAIN, AND BIARRITZ, AS WINTER CLIMATES. Fourth Edition, with numerous Plates, Maps, and Wood Engravings. Post 8vo. cloth, 12*s*.

ROBERT BENTLEY, F.L.S.

A MANUAL OF BOTANY. With nearly 1,200 Engravings on Wood. Fcap. 8vo. cloth, 12*s*. 6*d*.

ALBERT J. BERNAYS, PH.D., F.C.S.

NOTES FOR STUDENTS IN CHEMISTRY; being a Syllabus compiled from the Manuals of Miller, Fownes, Berzelius, Gerhardt, Gorup-Besanez, &c. Fifth Edition. Fcap. 8vo. cloth, 3*s*. 6*d*.

HENRY HEATHER BIGG.

ORTHOPRAXY: a complete Guide to the Modern Treatment of Deformities by Mechanical Appliances. With 300 Engravings. Second Edition. Post 8vo. cloth, 10*s*.

S. B. BIRCH M.D., M.R.C.P.

I.

OXYGEN: ITS ACTION, USE, AND VALUE IN THE TREATMENT OF VARIOUS DISEASES OTHERWISE INCURABLE OR VERY INTRACTABLE. Second Edition. Post 8vo. cloth, 3*s*. 6*d*.

II.

CONSTIPATED BOWELS: the Various Causes and the Different Means of Cure. Third Edition. Post 8vo. cloth, 3*s*. 6*d*.

GOLDING BIRD, M.D., F.R.S.

URINARY DEPOSITS; THEIR DIAGNOSIS, PATHOLOGY, AND THERAPEUTICAL INDICATIONS. With Engravings. Fifth Edition. Edited by E. Lloyd Birkett, M.D. Post 8vo. cloth, 10*s.* 6*d.*

JOHN BISHOP, F.R.C.S., F.R.S.

I.

ON DEFORMITIES OF THE HUMAN BODY, their Pathology and Treatment. With Engravings on Wood. 8vo. cloth, 10*s.*

II.

ON ARTICULATE SOUNDS, AND ON THE CAUSES AND CURE OF IMPEDIMENTS OF SPEECH. 8vo. cloth, 4*s.*

BLAINE.

OUTLINES OF THE VETERINARY ART; OR, A TREATISE ON THE ANATOMY, PHYSIOLOGY, AND DISEASES OF THE HORSE, NEAT CATTLE, AND SHEEP. Seventh Edition. By Charles Steel, M.R.C.V.S.L. With Plates. 8vo. cloth, 18*s.*

C. L. BLOXAM.

I.

CHEMISTRY, INORGANIC AND ORGANIC; with Experiments and a Comparison of Equivalent and Molecular Formulæ. With 276 Engravings on Wood. 8vo. cloth, 16*s.*

II.

LABORATORY TEACHING; OR PROGRESSIVE EXERCISES IN PRACTICAL CHEMISTRY. With 89 Engravings. Crown, 8vo. cloth, 5*s.* 6*d.*

HONORÉ BOURGUIGNON, M.D.

ON THE CATTLE PLAGUE; OR, CONTAGIOUS TYPHUS IN HORNED CATTLE: its History, Origin, Description, and Treatment. Post 8vo. 5*s.*

JOHN E. BOWMAN, & C. L. BLOXAM.

I.

PRACTICAL CHEMISTRY, including Analysis. With numerous Illustrations on Wood. Fifth Edition. Foolscap 8vo. cloth, 6*s.* 6*d.*

II.

MEDICAL CHEMISTRY; with Illustrations on Wood. Fourth Edition, carefully revised. Fcap. 8vo. cloth, 6*s.* 6*d.*

P. MURRAY BRAIDWOOD, M.D. EDIN.

ON PYÆMIA, OR SUPPURATIVE FEVER: the Astley Cooper Prize Essay for 1868. With 12 Plates. 8vo. cloth, 10*s.* 6*d.*

JAMES BRIGHT, M.D.

ON DISEASES OF THE HEART, LUNGS, & AIR PASSAGES: with a Review of the several Climates recommended in these Affections. Third Edition. Post 8vo. cloth, 9*s.*

WILLIAM BRINTON, M.D., F.R.S.

I.

THE DISEASES OF THE STOMACH, with an Introduction on its Anatomy and Physiology; being Lectures delivered at St. Thomas's Hospital. Second Edition. 8vo. cloth, 10*s.* 6*d.*

II.

INTESTINAL OBSTRUCTION. Edited by DR. BUZZARD. Post 8vo. cloth, 5*s.*

BERNARD E. BRODHURST, F.R.C.S.

I.

CURVATURES OF THE SPINE: their Causes, Symptoms, Pathology, and Treatment. Second Edition. Roy. 8vo. cloth, with Engravings, 7*s.* 6*d.*

II.

ON THE NATURE AND TREATMENT OF CLUBFOOT AND ANALOGOUS DISTORTIONS involving the TIBIO-TARSAL ARTICULATION. With Engravings on Wood. 8vo. cloth, 4*s.* 6*d.*

III.

PRACTICAL OBSERVATIONS ON THE DISEASES OF THE JOINTS INVOLVING ANCHYLOSIS, and on the TREATMENT for the RESTORATION of MOTION. Third Edition, much enlarged, 8vo. cloth, 4*s.* 6*d.*

CHARLES BROOKE, M.A., M.B., F.R.S.

ELEMENTS OF NATURAL PHILOSOPHY. Based on the Work of the late Dr. Golding Bird. Sixth Edition. With 700 Engravings. Fcap. 8vo. cloth, 12*s.* 6*d.*

T. L. BRUNTON, B.Sc., M.B.

ON DIGITALIS. With some Observations on the Urine. Fcap. 8vo. cloth, 4*s.* 6*d.*

THOMAS BRYANT, F.R.C.S.

I.

ON THE DISEASES AND INJURIES OF THE JOINTS. CLINICAL AND PATHOLOGICAL OBSERVATIONS. Post 8vo. cloth, 7*s.* 6*d.*

II.

CLINICAL SURGERY. Parts I. to VII. 8vo., 3*s.* 6*d.* each.

FLEETWOOD BUCKLE, M.D., L.R.C.P.LOND.

VITAL AND ECONOMICAL STATISTICS OF THE HOSPITALS, INFIRMARIES, &c., OF ENGLAND AND WALES. Royal 8vo. 5*s.*

JOHN CHARLES BUCKNILL, M.D., F.R.C.P., F.R.S., & DANIEL H. TUKE, M.D.

A MANUAL OF PSYCHOLOGICAL MEDICINE: containing the History, Nosology, Description, Statistics, Diagnosis, Pathology, and Treatment of Insanity. Second Edition. 8vo. cloth, 15*s.*

GEORGE BUDD, M.D., F.R.C.P., F.R.S.

I.

ON DISEASES OF THE LIVER.

Illustrated with Coloured Plates and Engravings on Wood. Third Edition. 8vo. cloth, 16*s.*

II.

ON THE ORGANIC DISEASES AND FUNCTIONAL DISORDERS OF THE STOMACH. 8vo. cloth, 9*s.*

G. W. CALLENDER, F.R.C.S.

FEMORAL RUPTURE: Anatomy of the Parts concerned. With Plates. 8vo. cloth, 4*s.*

JOHN M. CAMPLIN, M.D., F.L.S.

ON DIABETES, AND ITS SUCCESSFUL TREATMENT. Third Edition, by Dr. Glover. Fcap. 8vo. cloth, 3*s.* 6*d.*

ROBERT B. CARTER, F.R.C.S.

ON THE INFLUENCE OF EDUCATION AND TRAINING IN PREVENTING DISEASES OF THE NERVOUS SYSTEM. Fcap. 8vo., 6*s.*

W. B. CARPENTER, M.D., F.R.S.

I.

PRINCIPLES OF HUMAN PHYSIOLOGY. With nearly 300 Illustrations on Steel and Wood. Seventh Edition. Edited by Mr. HENRY POWER. 8vo. cloth, 28*s.*

II.

A MANUAL OF PHYSIOLOGY. With 252 Illustrations on Steel and Wood. Fourth Edition. Fcap. 8vo. cloth, 12*s.* 6*d.*

III.

THE MICROSCOPE AND ITS REVELATIONS. With more than 400 Engravings on Steel and Wood. Fourth Edition. Fcap. 8vo. cloth, 12*s.* 6*d.*

JOSEPH PEEL CATLOW, M.R.C.S.

ON THE PRINCIPLES OF ÆSTHETIC MEDICINE; or the Natural Use of Sensation and Desire in the Maintenance of Health and the Treatment of Disease. 8vo. cloth, 9*s.*

T. K. CHAMBERS, M.D., F.R.C.P.

I.

LECTURES, CHIEFLY CLINICAL. Fourth Edition. 8vo. cloth, 14*s.*

II.

THE INDIGESTIONS OR DISEASES OF THE DIGESTIVE ORGANS FUNCTIONALLY TREATED. Second Edition. 8vo. cloth, 10*s.* 6*d.*

III.

SOME OF THE EFFECTS OF THE CLIMATE OF ITALY. Crown 8vo. cloth, 4*s.* 6*d.*

H. T. CHAPMAN, F.R.C.S.

I.

THE TREATMENT OF OBSTINATE ULCERS AND CUTANEOUS ERUPTIONS OF THE LEG WITHOUT CONFINEMENT. Third Edition. Post 8vo. cloth, 3*s.* 6*d.*

II.

VARICOSE VEINS: their Nature, Consequences, and Treatment, Palliative and Curative. Second Edition. Post 8vo. cloth, 3*s.* 6*d.*

PYE HENRY CHAVASSE, F.R.C.S.

I.

ADVICE TO A MOTHER ON THE MANAGEMENT OF HER CHILDREN. Tenth Edition. Foolscap 8vo., 2*s.* 6*d.*

II.

COUNSEL TO A MOTHER: being a Continuation and the Completion of "Advice to a Mother." Fcap. 8vo. 2*s.* 6*d.*

III.

ADVICE TO A WIFE ON THE MANAGEMENT OF HER OWN HEALTH. With an Introductory Chapter, especially addressed to a Young Wife. Ninth Edition. Fcap. 8vo., 2*s.* 6*d.*

F. LE GROS CLARK, F.R.C.S.

I.

LECTURES ON THE PRINCIPLES OF SURGICAL DIAGNOSIS: ESPECIALLY IN RELATION TO SHOCK AND VISCERAL LESIONS Delivered at the Royal College of Surgeons. 8vo. cloth, 10*s.* 6*d.*

II.

OUTLINES OF SURGERY; being an Epitome of the Lectures on the Principles and the Practice of Surgery delivered at St. Thomas's Hospital. Fcap. 8vo. cloth, 5*s.*

JOHN CLAY, M.R.C.S.

KIWISCH ON DISEASES OF THE OVARIES: Translated, by permission, from the last German Edition of his Clinical Lectures on the Special Pathology and Treatment of the Diseases of Women. With Notes, and an Appendix on the Operation of Ovariotomy. Royal 12mo. cloth, 16*s.*

JOHN COCKLE, M.D., F.R.C.P.

ON INTRA-THORACIC CANCER. 8vo. 6*s.* 6*d.*

MAURICE H. COLLIS, M.D.DUB., F.R.C.S.I.

THE DIAGNOSIS AND TREATMENT OF CANCER AND THE TUMOURS ANALOGOUS TO IT. With coloured Plates. 8vo. cloth, 14*s.*

A. J. COOLEY.

THE CYCLOPÆDIA OF PRACTICAL RECEIPTS, PROCESSES, AND COLLATERAL INFORMATION IN THE ARTS, MANUFACTURES, PROFESSIONS, AND TRADES, INCLUDING MEDICINE, PHARMACY, AND DOMESTIC ECONOMY; designed as a General Book of Reference for the Manufacturer, Tradesman, Amateur, and Heads of Families. Fourth and greatly enlarged Edition, 8vo. cloth, 28*s.*

W. WHITE COOPER, F.R.C.S.

I.

ON WOUNDS AND INJURIES OF THE EYE. Illustrated by 17 Coloured Figures and 41 Woodcuts. 8vo. cloth, 12*s.*

II.

ON NEAR SIGHT, AGED SIGHT, IMPAIRED VISION, AND THE MEANS OF ASSISTING SIGHT. With 31 Illustrations on Wood. Second Edition. Fcap. 8vo. cloth, 7*s.* 6*d.*

S. COOPER.

A DICTIONARY OF PRACTICAL SURGERY AND ENCYCLOPÆDIA OF SURGICAL SCIENCE. New Edition, brought down to the present time. By SAMUEL A. LANE, F.R.C.S., assisted by various eminent Surgeons. Vol. I., 8vo. cloth, £1. 5*s*.

HOLMES COOTE, F.R.C.S.

A REPORT ON SOME IMPORTANT POINTS IN THE TREATMENT OF SYPHILIS. 8vo. cloth, 5*s*.

R. P. COTTON, M.D., F.R.C.P.

PHTHISIS AND THE STETHOSCOPE; OR, THE PHYSICAL SIGNS OF CONSUMPTION. Fourth Edition. Foolscap 8vo. cloth, 3*s*. 6*d*.

WILLIAM COULSON, F.R.C.S.

ON DISEASES OF THE BLADDER AND PROSTATE GLAND. New Edition, revised. *In Preparation.*

WALTER J. COULSON, F.R.C.S.

I.

A TREATISE ON SYPHILIS. 8vo. cloth, 10*s*.

II.

STONE IN THE BLADDER: Its Prevention, Early Symptoms, and Treatment by Lithotrity. 8vo. cloth, 6*s*.

T. B. CURLING, F.R.C.S., F.R.S.

I.

OBSERVATIONS ON DISEASES OF THE RECTUM. Third Edition. 8vo. cloth, 7*s*. 6*d*.

II.

A PRACTICAL TREATISE ON DISEASES OF THE TESTIS, SPERMATIC CORD, AND SCROTUM. Third Edition, with Engravings. 8vo. cloth, 16*s*.

WILLIAM DALE, M.D.LOND.

A COMPENDIUM OF PRACTICAL MEDICINE AND MORBID ANATOMY. With Plates, 12mo. cloth, 7*s*.

DONALD DALRYMPLE, M.P., M.R.C.P.

THE CLIMATE OF EGYPT: METEOROLOGICAL AND MEDICAL OBSERVATIONS, with Practical Hints for Invalid Travellers. Post 8vo. cloth, 4*s*.

JOHN DALRYMPLE, F.R.C.S., F.R.S.

PATHOLOGY OF THE HUMAN EYE. Complete in Nine Fasciculi: imperial 4to., 20*s*. each; half-bound morocco, gilt tops, 9*l*. 15*s*.

HERBERT DAVIES, M.D., F.R.C.P.

ON THE PHYSICAL DIAGNOSIS OF DISEASES OF THE LUNGS AND HEART. Second Edition. Post 8vo. cloth, 8*s*.

JAMES G. DAVEY, M.D., M.R.C.P.

I.

THE GANGLIONIC NERVOUS SYSTEM: its Structure, Functions, and Diseases. 8vo. cloth, 9*s*.

II.

ON THE NATURE AND PROXIMATE CAUSE OF INSANITY. Post 8vo. cloth, 3*s*.

HENRY DAY, M.D., M.R.C.P.

CLINICAL HISTORIES; with Comments. 8vo. cloth, 7*s.* 6*d.*

JAMES DIXON, F.R.C.S.

A GUIDE TO THE PRACTICAL STUDY OF DISEASES OF THE EYE. Third Edition. Post 8vo. cloth, 9*s.*

HORACE DOBELL, M.D.

I.

DEMONSTRATIONS OF DISEASES IN THE CHEST, AND THEIR PHYSICAL DIAGNOSIS. With Coloured Plates. 8vo. cloth, 12*s.* 6*d.*

II.

LECTURES ON THE GERMS AND VESTIGES OF DISEASE, and on the Prevention of the Invasion and Fatality of Disease by Periodical Examinations. 8vo. cloth, 6*s.* 6*d.*

III.

ON TUBERCULOSIS: ITS NATURE, CAUSE, AND TREATMENT; with Notes on Pancreatic Juice. Second Edition. Crown 8vo. cloth, 3*s.* 6*d.*

IV.

LECTURES ON WINTER COUGH (CATARRH, BRONCHITIS, EMPHYSEMA, ASTHMA); with an Appendix on some Principles of Diet in Disease. Post 8vo. cloth, 5*s.* 6*d.*

V.

LECTURES ON THE TRUE FIRST STAGE OF CONSUMPTION. Crown 8vo. cloth, 3*s.* 6*d.*

C. TOOGOOD DOWNING, M.D.

NEURALGIA: its various Forms, Pathology, and Treatment. THE JACKSONIAN PRIZE ESSAY FOR 1850. 8vo. cloth, 10*s.* 6*d.*

ROBERT DRUITT, F.R.C.S.

THE SURGEON'S VADE-MECUM; with numerous Engravings on Wood. Ninth Edition. Foolscap 8vo. cloth, 12*s.* 6*d.*

ERNEST EDWARDS, B.A.

PHOTOGRAPHS OF EMINENT MEDICAL MEN, with brief Analytical Notices of their Works. Vols. I. and II. (24 Portraits), 4to. cloth, 24*s.* each.

CHARLES ELAM, M.D., M.R.C.P.

MEDICINE, DISEASE, AND DEATH: being an Enquiry into the Progress of Medicine as a Practical Art. 8vo. cloth, 3*s.* 6*d.*

EDWARD ELLIS, M.D.

A PRACTICAL MANUAL OF THE DISEASES OF CHILDREN. With a Formulary. Crown 8vo. cloth, 6*s.*

SIR JAMES EYRE, M.D.

I.

THE STOMACH AND ITS DIFFICULTIES. Sixth Edition, by Mr. BEALE. Fcap. 8vo., 2*s.* 6*d.*

II.

PRACTICAL REMARKS ON SOME EXHAUSTING DISEASES. Second Edition. Post 8vo. cloth, 4*s.* 6*d.*

J. FAYRER, M.D., F.R.C.S., C.S.I.

CLINICAL SURGERY IN INDIA. With Engravings. 8vo. cloth, 16*s.*

SAMUEL FENWICK, M.D., M.R.C.P.

I.

THE MORBID STATES OF THE STOMACH AND DUODENUM, AND THEIR RELATIONS TO THE DISEASES OF OTHER ORGANS. With 10 Plates. 8vo. cloth, 12*s.*

II.

THE STUDENT'S GUIDE TO MEDICAL DIAGNOSIS. With 41 Engravings. Fcap. 8vo. cloth, 5*s.* 6*d.*

SIR WILLIAM FERGUSSON, BART., F.R.C.S., F.R.S.

I.

A SYSTEM OF PRACTICAL SURGERY; with numerous Illustrations on Wood. Fourth Edition. Fcap. 8vo. cloth, 12*s.* 6*d.*

II.

LECTURES ON THE PROGRESS OF ANATOMY AND SURGERY DURING THE PRESENT CENTURY. With numerous Engravings. 8vo. cloth, 10*s.* 6*d.*

SIR JOHN FIFE, F.R.C.S. AND DAVID URQUHART.

MANUAL OF THE TURKISH BATH. Heat a Mode of Cure and a Source of Strength for Men and Animals. With Engravings. Post 8vo. cloth, 5*s.*

W. H. FLOWER, F.R.C.S., F.R.S.

DIAGRAMS OF THE NERVES OF THE HUMAN BODY, exhibiting their Origin, Divisions, and Connexions, with their Distribution to the various Regions of the Cutaneous Surface, and to all the Muscles. Folio, containing Six Plates, 14*s.*

WILLIAM FLUX.

THE LAW TO REGULATE THE SALE OF POISONS WITHIN GREAT BRITAIN. Crown 8vo. cloth, 2*s.* 6*d.*

G. FOWNES, PH.D., F.R.S.

I.

A MANUAL OF CHEMISTRY; with 187 Illustrations on Wood. Tenth Edition. Fcap. 8vo. cloth, 14*s.*
Edited by H. BENCE JONES, M.D., F.R.S., and HENRY WATTS, B.A., F.R.S.

II.

CHEMISTRY, AS EXEMPLIFYING THE WISDOM AND BENEFICENCE OF GOD. Second Edition. Fcap. 8vo. cloth, 4*s.* 6*d.*

III.

INTRODUCTION TO QUALITATIVE ANALYSIS. Post 8vo. cloth, 2*s.*

D. J. T. FRANCIS, M.D., F.R.C.P.

CHANGE OF CLIMATE; considered as a Remedy in Dyspeptic, Pulmonary, and other Chronic Affections; with an Account of the most Eligible Places of Residence for Invalids, at different Seasons of the Year. Post 8vo. cloth, 8*s.* 6*d.*

W. H. FULLER, M.D., F.R.C.P.

I.

ON DISEASES OF THE LUNGS AND AIR PASSAGES. Second Edition. 8vo. cloth, 12*s.* 6*d.*

II.

ON DISEASES OF THE HEART AND GREAT VESSELS. 8vo. cloth, 7*s.* 6*d.*

III.

ON RHEUMATISM, RHEUMATIC GOUT, AND SCIATICA: their Pathology, Symptoms, and Treatment. Third Edition. 8vo. cloth, 12*s.* 6*d.*

REMIGIUS FRESENIUS.

A SYSTEM OF INSTRUCTION IN CHEMICAL ANALYSIS,
Edited by ARTHUR VACHER.
QUALITATIVE. Seventh Edition. 8vo. cloth, 9*s.*
QUANTITATIVE. Fifth Edition. 8vo. cloth, 12*s.* 6*d.*

ROBERT GALLOWAY.

I.

THE FIRST STEP IN CHEMISTRY. With numerous Engravings. Fourth Edition. Fcap. 8vo. cloth, 6*s.* 6*d.*

II.

A KEY TO THE EXERCISES CONTAINED IN ABOVE. Fcap. 8vo., 2*s.* 6*d.*

III.

THE SECOND STEP IN CHEMISTRY; or, the Student's Guide to the Higher Branches of the Science. With Engravings. 8vo. cloth, 10*s.*

IV.

A MANUAL OF QUALITATIVE ANALYSIS. Fifth Edition. With Engravings. Post 8vo. cloth, 8*s.* 6*d.*

V.

CHEMICAL TABLES. On Five Large Sheets, for School and Lecture Rooms. Second Edition. 4*s.* 6*d.*

J. SAMPSON GAMGEE, M.R.C.S.

HISTORY OF A SUCCESSFUL CASE OF AMPUTATION AT THE HIP-JOINT (the limb 48-in. in circumference, 99 pounds weight). With 4 Photographs. 4to cloth, 10*s.* 6*d.*

F. J. GANT, F.R.C.S.

I.

THE PRINCIPLES OF SURGERY: Clinical, Medical, and Operative. With Engravings. 8vo. cloth, 18*s.*

II.

THE IRRITABLE BLADDER: its Causes and Curative Treatment. Second Edition, enlarged. Crown 8vo. cloth, 5*s.*

JOHN GAY, F.R.C.S.

ON VARICOSE DISEASE OF THE LOWER EXTREMITIES. LETTSOMIAN LECTURES. With Plates. 8vo. cloth, 5*s.*

SIR DUNCAN GIBB, BART., M.D.

I.

ON DISEASES OF THE THROAT AND WINDPIPE, as reflected by the Laryngoscope. Second Edition. With 116 Engravings. Post 8vo. cloth, 10*s.* 6*d.*

II.

THE LARYNGOSCOPE IN DISEASES OF THE THROAT, with a Chapter on RHINOSCOPY. Third Edition, with Engravings. Crown 8vo., cloth, 5*s.*

C. A. GORDON, M.D., C.B.

I.

ARMY HYGIENE. 8vo. cloth, 20*s.*

II.

CHINA, FROM A MEDICAL POINT OF VIEW: IN 1860 AND 1861; With a Chapter on Nagasaki as a Sanatarium. 8vo. cloth, 10*s.* 6*d.*

WILLIAM GAIRDNER, M.D.

ON GOUT; its History, its Causes, and its Cure. Fourth Edition. Post 8vo. cloth, 8*s.* 6*d.*

MICHAEL C. GRABHAM, M.D., M.R.C.P.

THE CLIMATE AND RESOURCES OF MADEIRA, as regarding chiefly the Necessities of Consumption and the Welfare of Invalids. With Map and Engravings. Crown 8vo. cloth, 5*s.*

R. J. GRAVES, M.D., F.R.S.

STUDIES IN PHYSIOLOGY AND MEDICINE. Edited by Dr. Stokes. With Portrait and Memoir. 8vo. cloth, 14*s.*

T. GRIFFITHS.

CHEMISTRY OF THE FOUR SEASONS—Spring, Summer, Autumn, Winter. Illustrated with Engravings on Wood. Second Edition. Foolscap 8vo. cloth, 7*s.* 6*d.*

JAMES M. GULLY, M.D.

THE SIMPLE TREATMENT OF DISEASE; deduced from the Methods of Expectancy and Revulsion. 18mo. cloth, 4*s.*

W. A. GUY, M.B., F.R.S., AND JOHN HARLEY, M.D., F.R.C.P.

HOOPER'S PHYSICIAN'S VADE-MECUM: OR, MANUAL OF THE PRINCIPLES AND PRACTICE OF PHYSIC. Seventh Edition. With Engravings. Foolscap 8vo. cloth, 12*s.* 6*d.*

GUY'S HOSPITAL REPORTS. Third Series. Vol. XV., 8vo. 7*s.* 6*d.*

S. O. HABERSHON, M.D., F.R.C.P.

I.

ON DISEASES OF THE ABDOMEN, comprising those of the Stomach and other Parts of the Alimentary Canal, Œsophagus, Stomach, Cæcum, Intestines, and Peritoneum. Second Edition, with Plates. 8vo. cloth, 14*s.*

II.

ON THE INJURIOUS EFFECTS OF MERCURY IN THE TREATMENT OF DISEASE. Post 8vo. cloth, 3*s.* 6*d.*

C. RADCLYFFE HALL, F.R.C.P.

TORQUAY IN ITS MEDICAL ASPECT AS A RESORT FOR PULMONARY INVALIDS. Post 8vo. cloth, 5*s.*

MARSHALL HALL, M.D., F.R.S.

I.

PRONE AND POSTURAL RESPIRATION IN DROWNING AND OTHER FORMS OF APNŒA OR SUSPENDED RESPIRATION. Post 8vo. cloth. 5*s.*

II.

PRACTICAL OBSERVATIONS AND SUGGESTIONS IN MEDICINE. Second Series. Post 8vo. cloth, 8*s.* 6*d.*

REV. T F. HARDWICH.

A MANUAL OF PHOTOGRAPHIC CHEMISTRY. With Engravings. Seventh Edition. Foolscap 8vo. cloth, 7*s.* 6*d.*

J. BOWER HARRISON, M.D., M.R.C.P.

I.

LETTERS TO A YOUNG PRACTITIONER ON THE DISEASES OF CHILDREN. Foolscap 8vo. cloth, 3*s*.

II.

ON THE CONTAMINATION OF WATER BY THE POISON OF LEAD, and its Effects on the Human Body. Foolscap 8vo. cloth, 3*s*. 6*d*.

GEORGE HARTWIG, M.D.

I.

ON SEA BATHING AND SEA AIR. Second Edition. Fcap. 8vo., 2*s*. 6*d*.

II.

ON THE PHYSICAL EDUCATION OF CHILDREN. Fcap. 8vo., 2*s*. 6*d*.

A. H. HASSALL, M.D.

THE URINE, IN HEALTH AND DISEASE; being an Explanation of the Composition of the Urine, and of the Pathology and Treatment of Urinary and Renal Disorders. Second Edition. With 79 Engravings (23 Coloured). Post 8vo. cloth, 12*s*. 6*d*.

ALFRED HAVILAND, M.R.C.S.

CLIMATE, WEATHER, AND DISEASE; being a Sketch of the Opinions of the most celebrated Ancient and Modern Writers with regard to the Influence of Climate and Weather in producing Disease. With Four coloured Engravings. 8vo. cloth, 7*s*.

W. HAYCOCK, M.R.C.V.S.

HORSES; HOW THEY OUGHT TO BE SHOD: being a plain and practical Treatise on the Principles and Practice of the Farrier's Art. With 14 Plates. Cloth, 7*s*. 6*d*.

F. W. HEADLAND, M.D., F.R.C.P.

I.

ON THE ACTION OF MEDICINES IN THE SYSTEM. Fourth Edition. 8vo. cloth, 14*s*.

II.

A MEDICAL HANDBOOK; comprehending such Information on Medical and Sanitary Subjects as is desirable in Educated Persons. Second Thousand. Foolscap 8vo. cloth, 5*s*.

J. N. HEALE, M.D., M.R.C.P.

I.

A TREATISE ON THE PHYSIOLOGICAL ANATOMY OF THE LUNGS. With Engravings. 8vo. cloth, 8*s*.

II.

A TREATISE ON VITAL CAUSES. 8vo. cloth, 9*s*.

CHRISTOPHER HEATH, F.R.C.S.

I.

PRACTICAL ANATOMY: a Manual of Dissections. With numerous Engravings. Second Edition. Fcap. 8vo. cloth, 12*s.* 6*d.*

II.

A MANUAL OF MINOR SURGERY AND BANDAGING, FOR THE USE OF HOUSE-SURGEONS, DRESSERS, AND JUNIOR PRACTITIONERS. With Illustrations. Third Edition. Fcap. 8vo. cloth, 5*s.*

III.

INJURIES AND DISEASES OF THE JAWS. JACKSONIAN PRIZE ESSAY. With Engravings. 8vo. cloth, 12*s.*

JOHN HIGGINBOTTOM, F.R.S., F.R.C.S.E.

A PRACTICAL ESSAY ON THE USE OF THE NITRATE OF SILVER IN THE TREATMENT OF INFLAMMATION, WOUNDS, AND ULCERS. Third Edition, 8vo. cloth, 6*s.*

WILLIAM HINDS, M.D.

THE HARMONIES OF PHYSICAL SCIENCE IN RELATION TO THE HIGHER SENTIMENTS; with Observations on Medical Studies, and on the Moral and Scientific Relations of Medical Life. Post 8vo. cloth, 4*s.*

J. A. HINGESTON, M.R.C.S.

TOPICS OF THE DAY, MEDICAL, SOCIAL, AND SCIENTIFIC. Crown 8vo. cloth, 7*s.* 6*d.*

RICHARD HODGES, M.D.

THE NATURE, PATHOLOGY, AND TREATMENT OF PUERPERAL CONVULSIONS. Crown 8vo. cloth, 3s.

DECIMUS HODGSON, M.D.

THE PROSTATE GLAND, AND ITS ENLARGEMENT IN OLD AGE. With 12 Plates. Royal 8vo. cloth, 6*s.*

JABEZ HOGG, M.R.C.S.

A MANUAL OF OPHTHALMOSCOPIC SURGERY; being a Practical Treatise on the Use of the Ophthalmoscope in Diseases of the Eye. Third Edition. With Coloured Plates. 8vo. cloth, 10*s.* 6*d.*

LUTHER HOLDEN, F.R.C.S.

I.

HUMAN OSTEOLOGY: with Plates, showing the Attachments of the Muscles. Fourth Edition. 8vo. cloth, 16*s.*

II.

A MANUAL OF THE DISSECTION OF THE HUMAN BODY. With Engravings on Wood. Third Edition. 8vo. cloth, 16*s.*

BARNARD HOLT, F.R.C.S.

ON THE IMMEDIATE TREATMENT OF STRICTURE OF THE URETHRA. Third Edition, Enlarged. 8vo. cloth, 6*s.*

SIR CHARLES HOOD, M.D.

SUGGESTIONS FOR THE FUTURE PROVISION OF CRIMINAL LUNATICS. 8vo. cloth, 5*s.* 6*d.*

P. HOOD M.D.

THE SUCCESSFUL TREATMENT OF SCARLET FEVER; also, OBSERVATIONS ON THE PATHOLOGY AND TREATMENT OF CROWING INSPIRATIONS OF INFANTS. Post 8vo. cloth, 5*s.*

JOHN HORSLEY.

A CATECHISM OF CHEMICAL PHILOSOPHY; being a Familiar Exposition of the Principles of Chemistry and Physics. With Engravings on Wood. Designed for the Use of Schools and Private Teachers. Post 8vo. cloth, 6*s.* 6*d.*

JAMES A. HORTON, M.D.

PHYSICAL AND MEDICAL CLIMATE AND METEOROLOGY OF THE WEST COAST OF AFRICA. 8vo. cloth, 10*s.*

LUKE HOWARD, F.R.S.

ESSAY ON THE MODIFICATIONS OF CLOUDS. Third Edition, by W. D. and E. HOWARD. With 6 Lithographic Plates, from Pictures by Kenyon. 4to. cloth, 10*s.* 6*d.*

A. HAMILTON HOWE, M.D.

A THEORETICAL INQUIRY INTO THE PHYSICAL CAUSE OF EPIDEMIC DISEASES. Accompanied with Tables. 8vo. cloth, 7*s.*

C. W. HUFELAND.

THE ART OF PROLONGING LIFE. Second Edition. Edited by ERASMUS WILSON, F.R.S. Foolscap 8vo., 2*s.* 6*d.*

W. CURTIS HUGMAN, F.R.C.S.

ON HIP-JOINT DISEASE; with reference especially to Treatment by Mechanical Means for the Relief of Contraction and Deformity of the Affected Limb. With Plates. Re-issue, enlarged. 8vo. cloth, 3*s.* 6*d.*

J. W. HULKE, F.R.C.S., F.R.S.

A PRACTICAL TREATISE ON THE USE OF THE OPHTHALMOSCOPE. Being the Jacksonian Prize Essay for 1859. Royal 8vo. cloth, 8*s.*

HENRY HUNT, F.R.C.P.

ON HEARTBURN AND INDIGESTION. 8vo. cloth, 5*s.*

G. Y. HUNTER, M.R.C.S.

BODY AND MIND: the Nervous System and its Derangements. Fcap. 8vo. cloth, 3*s.* 6*d.*

JONATHAN HUTCHINSON, F.R.C.S.

A CLINICAL MEMOIR ON CERTAIN DISEASES OF THE EYE AND EAR, CONSEQUENT ON INHERITED SYPHILIS; with an appended Chapter of Commentaries on the Transmission of Syphilis from Parent to Offspring, and its more remote Consequences. With Plates and Woodcuts, 8vo. cloth, 9*s*.

T. H. HUXLEY, LL.D., F.R.S.

INTRODUCTION TO THE CLASSIFICATION OF ANIMALS. With Engravings. 8vo. cloth, 6*s*.

THOMAS INMAN, M.D., M.R.C.P.

I.

ON MYALGIA: ITS NATURE, CAUSES, AND TREATMENT; being a Treatise on Painful and other Affections of the Muscular System. Second Edition. 8vo. cloth, 9*s*.

II.

FOUNDATION FOR A NEW THEORY AND PRACTICE OF MEDICINE. Second Edition. Crown 8vo. cloth, 10*s*.

JAMES JAGO, M.D.OXON., A.B.CANTAB.

ENTOPTICS, WITH ITS USES IN PHYSIOLOGY AND MEDICINE. With 54 Engravings. Crown 8vo. cloth, 5*s*.

M. PROSSER JAMES, M.D., M.R.C.P.

SORE-THROAT: ITS NATURE, VARIETIES, AND TREATMENT; including the Use of the LARYNGOSCOPE as an Aid to Diagnosis. Second Edition, with numerous Engravings. Post 8vo. cloth, 5*s*.

F. E. JENCKEN, M.D., M.R.C.P.

THE CHOLERA: ITS ORIGIN, IDIOSYNCRACY, AND TREATMENT. Fcap. 8vo. cloth, 2*s*. 6*d*.

C. HANDFIELD JONES, M.B., F.R.C.P., F.R.S.

STUDIES ON FUNCTIONAL NERVOUS DISORDERS. Second Edition, much enlarged. 8vo. cloth, 18*s*.

H. BENCE JONES, M.D., F.R.C.P., F.R.S.

I.

LECTURES ON SOME OF THE APPLICATIONS OF CHEMISTRY AND MECHANICS TO PATHOLOGY AND THERAPEUTICS. 8vo. cloth, 12*s*.

II.

CROONIAN LECTURES ON MATTER AND FORCE. Fcap. 8vo. cloth, 5*s*.

C. HANDFIELD JONES, M.B., F.R.S., & E. H. SIEVEKING, M.D., F.R.C.P.

A MANUAL OF PATHOLOGICAL ANATOMY. Illustrated with numerous Engravings on Wood. Foolscap 8vo. cloth, 12*s*. 6*d*.

JAMES JONES, M.D., M.R.C.P.

ON THE USE OF PERCHLORIDE OF IRON AND OTHER CHALYBEATE SALTS IN THE TREATMENT OF CONSUMPTION. Crown 8vo. cloth, 3*s.* 6*d.*

T. WHARTON JONES, F.R.C.S., F.R.S.

I.

A MANUAL OF THE PRINCIPLES AND PRACTICE OF OPHTHALMIC MEDICINE AND SURGERY; with Nine Coloured Plates and 173 Wood Engravings. Third Edition, thoroughly revised. Foolscap 8vo. cloth, 12*s.* 6*d.*

II.

THE WISDOM AND BENEFICENCE OF THE ALMIGHTY, AS DISPLAYED IN THE SENSE OF VISION. Actonian Prize Essay. With Illustrations on Steel and Wood. Foolscap 8vo. cloth, 4*s.* 6*d.*

III.

DEFECTS OF SIGHT AND HEARING: their Nature, Causes, Prevention, and General Management. Second Edition, with Engravings. Fcap. 8vo. 2*s.* 6*d.*

IV.

A CATECHISM OF THE MEDICINE AND SURGERY OF THE EYE AND EAR. For the Clinical Use of Hospital Students. Fcap. 8vo. 2*s.* 6*d.*

V.

A CATECHISM OF THE PHYSIOLOGY AND PHILOSOPHY OF BODY, SENSE, AND MIND. For Use in Schools and Colleges. Fcap. 8vo., 2*s.* 6*d.*

U. J. KAY-SHUTTLEWORTH, M.P.

FIRST PRINCIPLES OF MODERN CHEMISTRY: a Manual of Inorganic Chemistry. Second Edition. Crown 8vo. cloth, 4*s.* 6*d.*

DR. LAENNEC.

A MANUAL OF AUSCULTATION AND PERCUSSION. Translated and Edited by J. B. SHARPE, M.R.C.S. 3*s.*

SIR WM. LAWRENCE, BART., F.R.S.

I.

LECTURES ON SURGERY. 8vo. cloth, 16*s.*

II.

A TREATISE ON RUPTURES. The Fifth Edition, considerably enlarged. 8vo. cloth, 16*s.*

ARTHUR LEARED, M.D., M.R.C.P.

IMPERFECT DIGESTION: ITS CAUSES AND TREATMENT. Fifth Edition. Foolscap 8vo. cloth, 4*s.* 6*d.*

HENRY LEE, F.R.C.S.

PRACTICAL PATHOLOGY. Third Edition, in 2 Vols. Containing Lectures on Suppurative Fever, Diseases of the Veins, Hæmorrhoidal Tumours, Diseases of the Rectum, Syphilis, Gonorrhœal Ophthalmia, &c. 8vo. cloth, 10*s.* each vol.

EDWIN LEE, M.D.

I.

THE EFFECT OF CLIMATE ON TUBERCULOUS DISEASE, with Notices of the chief Foreign Places of Winter Resort. Small 8vo. cloth, 4*s.* 6*d.*

II.

THE WATERING PLACES OF ENGLAND, CONSIDERED with Reference to their Medical Topography. Fourth Edition. Fcap. 8vo. cloth, 7*s.* 6*d.*

III.

THE BATHS OF FRANCE. Fourth Edition. Fcap. 8vo. cloth, 4*s.* 6*d.*

IV.

THE BATHS OF GERMANY. Fourth Edition. Post 8vo. cloth, 7*s.*

V.

THE BATHS OF SWITZERLAND. 12mo. cloth, 3*s.* 6*d.*

VI.

HOMŒOPATHY AND HYDROPATHY IMPARTIALLY APPRECIATED. Fourth Edition. Post 8vo. cloth, 3*s.*

ROBERT LEE, M.D, F.R.C.P., F.R.S.

I.

CONSULTATIONS IN MIDWIFERY. Foolscap 8vo. cloth, 4*s.* 6*d.*

II.

A TREATISE ON THE SPECULUM; with Three Hundred Cases. 8vo. cloth, 4*s.* 6*d.*

III.

CLINICAL REPORTS OF OVARIAN AND UTERINE DISEASES, with Commentaries. Foolscap 8vo. cloth, 6*s.* 6*d.*

IV.

CLINICAL MIDWIFERY: comprising the Histories of 545 Cases of Difficult, Preternatural, and Complicated Labour, with Commentaries. Second Edition. Foolscap 8vo. cloth, 5*s.*

WM. LEISHMAN, M.D., F.F.P.S.

THE MECHANISM OF PARTURITION: An Essay, Historical and Critical. With Engravings. 8vo. cloth, 5*s.*

F. HARWOOD LESCHER.

THE ELEMENTS OF PHARMACY. 8vo. cloth, 7*s.* 6*d.*

ROBERT LISTON, F.R.S.

PRACTICAL SURGERY. Fourth Edition. 8vo. cloth, 22*s.*

D. D. LOGAN, M.D., M.R.C.P.LOND.

ON OBSTINATE DISEASES OF THE SKIN. Fcap. 8vo. cloth, 2*s.* 6*d.*

LONDON HOSPITAL.

CLINICAL LECTURES AND REPORTS BY THE MEDICAL AND SURGICAL STAFF. With Illustrations. Vols. I. to IV. 8vo. cloth, 7*s.* 6*d.*

LONDON MEDICAL SOCIETY OF OBSERVATION.

WHAT TO OBSERVE AT THE BED-SIDE, AND AFTER DEATH. Published by Authority. Second Edition. Foolscap 8vo. cloth, 4*s.* 6*d.*

HENRY LOWNDES, M.R.C.S.

AN ESSAY ON THE MAINTENANCE OF HEALTH. Fcap. 8vo. cloth, 2*s.* 6*d.*

MORELL MACKENZIE, M.D. LOND., M.R.C.P.

HOARSENESS, LOSS OF VOICE, AND STRIDULOUS BREATHING in relation to NERVO-MUSCULAR AFFECTIONS of the LARYNX. Second Edition. Fully Illustrated. 8vo. 2*s.* 6*d.*

DANIEL MACLACHLAN, M.D., F.R.C.P.L.

THE DISEASES AND INFIRMITIES OF ADVANCED LIFE. 8vo. cloth, 16*s.*

A. C. MACLEOD, M.R.C.P.LOND.

ACHOLIC DISEASES; comprising Jaundice, Diarrhœa, Dysentery, and Cholera. Post 8vo. cloth, 5*s.* 6*d.*

GEORGE H. B. MACLEOD, M.D., F.R.C.S.EDIN.

I.

OUTLINES OF SURGICAL DIAGNOSIS. 8vo. cloth, 12*s.* 6*d.*

II.

NOTES ON THE SURGERY OF THE CRIMEAN WAR; with REMARKS on GUN-SHOT WOUNDS. 8vo. cloth, 10*s.* 6*d.*

WM. MACLEOD, M.D., F.R.C.P.EDIN.

THE THEORY OF THE TREATMENT OF DISEASE ADOPTED AT BEN RHYDDING. Fcap. 8vo. cloth, 2*s.* 6*d.*

JOSEPH MACLISE, F.R.C.S.

I.

SURGICAL ANATOMY. A Series of Dissections, illustrating the Principal Regions of the Human Body. Second Edition, folio, cloth, £3. 12*s.*; half-morocco, £4. 4*s.*

II.

ON DISLOCATIONS AND FRACTURES. This Work is Uniform with "Surgical Anatomy;" folio, cloth, £2. 10*s.*; half-morocco, £2. 17*s.*

N. C. MACNAMARA.

I.

A MANUAL OF THE DISEASES OF THE EYE. With Coloured Plates. Fcap. 8vo. cloth, 12*s.* 6*d.*

II.

A TREATISE ON ASIATIC CHOLERA; with Maps. 8vo. cloth, 16*s.*

WM. MARCET, M.D., F.R.C.P., F.R.S.

ON CHRONIC ALCOHOLIC INTOXICATION; with an INQUIRY INTO THE INFLUENCE OF THE ABUSE OF ALCOHOL AS A PREDISPOSING CAUSE OF DISEASE. Second Edition, much enlarged. Foolscap 8vo. cloth, 4*s.* 6*d.*

J. MACPHERSON, M.D.

CHOLERA IN ITS HOME; with a Sketch of the Pathology and Treatment of the Disease. Crown 8vo. cloth, 5*s*.

W. O. MARKHAM, M.D., F.R.C.P.

I.

DISEASES OF THE HEART: THEIR PATHOLOGY, DIAGNOSIS, AND TREATMENT. Second Edition. Post 8vo. cloth, 6*s*.

II.

SKODA ON AUSCULTATION AND PERCUSSION. Post 8vo. cloth, 6*s*.

III.

BLEEDING AND CHANGE IN TYPE OF DISEASES. Gulstonian Lectures for 1864. Crown 8vo. 2*s*. 6*d*.

ALEXANDER MARSDEN, M.D., F.R.C.S.

A NEW AND SUCCESSFUL MODE OF TREATING CERTAIN FORMS OF CANCER; to which is prefixed a Practical and Systematic Description of all the Varieties of this Disease. With Coloured Plates. 8vo. cloth, 6*s*. 6*d*.

SIR RANALD MARTIN, C.B., F.R.C.S., F.R.S.

INFLUENCE OF TROPICAL CLIMATES IN PRODUCING THE ACUTE ENDEMIC DISEASES OF EUROPEANS; including Practical Observations on their Chronic Sequelæ under the Influences of the Climate of Europe. Second Edition, much enlarged. 8vo. cloth, 20*s*.

P. MARTYN, M.D.LOND.

HOOPING-COUGH; ITS PATHOLOGY AND TREATMENT. With Engravings. 8vo. cloth, 2*s*. 6*d*.

C. F. MAUNDER, F.R.C.S.

OPERATIVE SURGERY. With 158 Engravings. Post 8vo. 6*s*.

R. G. MAYNE, M.D., LL.D.

I.

AN EXPOSITORY LEXICON OF THE TERMS, ANCIENT AND MODERN, IN MEDICAL AND GENERAL SCIENCE. 8vo. cloth, £2. 10*s*.

II.

A MEDICAL VOCABULARY; or, an Explanation of all Names, Synonymes, Terms, and Phrases used in Medicine and the relative branches of Medical Science. Third Edition. Fcap. 8vo. cloth, 8*s*. 6*d*.

EDWARD MERYON, M.D., F.R.C.P.

PATHOLOGICAL AND PRACTICAL RESEARCHES ON THE VARIOUS FORMS OF PARALYSIS. 8vo. cloth, 6*s*.

W. J. MOORE, M.D.

I.

HEALTH IN THE TROPICS; or, Sanitary Art applied to Europeans in India. 8vo. cloth, 9*s*.

II.

A MANUAL OF THE DISEASES OF INDIA. Fcap. 8vo. cloth, 5*s*.

JAMES MORRIS, M.D.LOND.

I.

GERMINAL MATTER AND THE CONTACT THEORY: An Essay on the Morbid Poisons. Second Edition. Crown 8vo. cloth, 4*s.* 6*d.*

II.

IRRITABILITY: Popular and Practical Sketches of Common Morbid States and Conditions bordering on Disease; with Hints for Management, Alleviation, and Cure. Crown 8vo. cloth, 4*s.* 6*d.*

G. J. MULDER.

THE CHEMISTRY OF WINE. Edited by H. BENCE JONES, M.D., F.R.S. Fcap. 8vo. cloth, 6*s.*

W. MURRAY, M.D., M.R.C.P.

EMOTIONAL DISORDERS OF THE SYMPATHETIC SYSTEM OF NERVES. Crown 8vo. cloth, 3*s.* 6*d.*

W. B. MUSHET, M.B., M.R.C.P.

ON APOPLEXY, AND ALLIED AFFECTIONS OF THE BRAIN. 8vo. cloth, 7*s.*

GEORGE NAYLER, F.R.C.S.

ON THE DISEASES OF THE SKIN. With Plates. 8vo. cloth, 10*s.* 6*d.*

J. BIRKBECK NEVINS, M.D.

THE PRESCRIBER'S ANALYSIS OF THE BRITISH PHARMACOPEIA of 1867. 32mo. cloth, 3*s.* 6*d.*

H. M. NOAD, PH.D., F.R.S.

THE INDUCTION COIL, being a Popular Explanation of the Electrical Principles on which it is constructed. Third Edition. With Engravings. Fcap. 8vo. cloth, 3*s.*

DANIEL NOBLE, M.D., F.R.C.P.

THE HUMAN MIND IN ITS RELATIONS WITH THE BRAIN AND NERVOUS SYSTEM. Post 8vo. cloth, 4*s.* 6*d.*

SELBY NORTON, M.D.

INFANTILE DISEASES: their Causes, Prevention, and Treatment, showing by what Means the present Mortality may be greatly reduced. Fcap. 8vo. cloth, 2*s.* 6*d.*

THOMAS NUNNELEY, F.R.C.S.

I.

ON THE ORGANS OF VISION: THEIR ANATOMY AND PHYSIOLOGY. With Plates, 8vo. cloth, 15*s.*

II.

A TREATISE ON THE NATURE, CAUSES, AND TREATMENT OF ERYSIPELAS. 8vo. cloth, 10*s.* 6*d.*

FRANCIS OPPERT, M.D., M.R.C.P.

I.

HOSPITALS, INFIRMARIES, AND DISPENSARIES; their Construction, Interior Arrangement, and Management, with Descriptions of existing Institutions. With 58 Engravings. Royal 8vo. cloth, 10*s.* 6*d.*

II.

VISCERAL AND HEREDITARY SYPHILIS. 8vo. cloth, 5*s.*

LANGSTON PARKER, F.R.C.S.

THE MODERN TREATMENT OF SYPHILITIC DISEASES, both Primary and Secondary; comprising the Treatment of Constitutional and Confirmed Syphilis, by a safe and successful Method. Fourth Edition, 8vo. cloth, 10*s.*

E. A. PARKES, M.D., F.R.C.P., F.R.S.

I.

A MANUAL OF PRACTICAL HYGIENE; intended especially for the Medical Officers of the Army. With Plates and Woodcuts. 3rd Edition, 8vo. cloth, 16s.

II.

THE URINE: ITS COMPOSITION IN HEALTH AND DISEASE, AND UNDER THE ACTION OF REMEDIES. 8vo. cloth, 12s.

JOHN PARKIN, M.D., F.R.C.S.

I.

THE ANTIDOTAL TREATMENT AND PREVENTION OF THE EPIDEMIC CHOLERA. Third Edition. 8vo. cloth, 7s. 6d.

II.

THE CAUSATION AND PREVENTION OF DISEASE; with the Laws regulating the Extrication of Malaria from the Surface, and its Diffusion in the surrounding Air. 8vo. cloth, 5s.

JAMES PART, F.R.C.S.

THE MEDICAL AND SURGICAL POCKET CASE BOOK, for the Registration of important Cases in Private Practice, and to assist the Student of Hospital Practice. Second Edition. 2s. 6d.

JOHN PATTERSON, M.D.

EGYPT AND THE NILE AS A WINTER RESORT FOR PULMONARY AND OTHER INVALIDS. Fcap. 8vo. cloth, 3s.

F. W. PAVY, M.D., F.R.S., F.R.C.P.

I.

DIABETES: RESEARCHES ON ITS NATURE AND TREATMENT. Second Edition. With Engravings. 8vo. cloth, 10s.

II.

DIGESTION: ITS DISORDERS AND THEIR TREATMENT. Second Edition. 8vo. cloth, 8s. 6d.

T. B. PEACOCK, M.D., F.R.C.P.

I.

ON MALFORMATIONS OF THE HUMAN HEART. With Original Cases and Illustrations. Second Edition. With 8 Plates. 8vo. cloth, 10s.

II.

ON SOME OF THE CAUSES AND EFFECTS OF VALVULAR DISEASE OF THE HEART. With Engravings. 8vo. cloth, 5s.

W. H. PEARSE, M.D.EDIN.

NOTES ON HEALTH IN CALCUTTA AND BRITISH EMIGRANT SHIPS, including Ventilation, Diet, and Disease. Fcap. 8vo. 2s.

JONATHAN PEREIRA, M.D., F.R.S.

SELECTA E PRÆSCRIPTIS. Fifteenth Edition. 24mo. cloth, 5s.

JAMES H. PICKFORD, M.D.

HYGIENE; or, Health as Depending upon the Conditions of the Atmosphere, Food and Drinks, Motion and Rest, Sleep and Wakefulness, Secretions, Excretions, and Retentions, Mental Emotions, Clothing, Bathing, &c. Vol. I. 8vo. cloth, 9s.

WILLIAM PIRRIE, M.D., C.M:, F.R.S.E.

THE PRINCIPLES AND PRACTICE OF SURGERY. With numerous Engravings on Wood. Second Edition. 8vo. cloth, 24*s.*

WILLIAM PIRRIE, M.D.

ON HAY ASTHMA, AND THE AFFECTION TERMED HAY FEVER. Fcap. 8vo. cloth, 2*s.* 6*d.*

HENRY POWER, F.R.C.S., M.B.LOND.

ILLUSTRATIONS OF SOME OF THE PRINCIPAL DISEASES OF THE EYE: With an Account of their Symptoms, Pathology and Treatment. Twelve Coloured Plates. 8vo. cloth, 20*s.*

HENRY F. A. PRATT, M.D., M.R.C.P.

I.

THE GENEALOGY OF CREATION, newly Translated from the Unpointed Hebrew Text of the Book of Genesis, showing the General Scientific Accuracy of the Cosmogony of Moses and the Philosophy of Creation. 8vo. cloth, 14*s.*

II.

ON ECCENTRIC AND CENTRIC FORCE: A New Theory of Projection. With Engravings. 8vo. cloth, 10*s.*

III.

ON ORBITAL MOTION: The Outlines of a System of Physical Astronomy. With Diagrams. 8vo. cloth, 7*s.* 6*d.*

IV.

ASTRONOMICAL INVESTIGATIONS. The Cosmical Relations of the Revolution of the Lunar Apsides. Oceanic Tides. With Engravings. 8vo. cloth, 5*s.*

V.

THE ORACLES OF GOD: An Attempt at a Re-interpretation. Part I. The Revealed Cosmos. 8vo. cloth, 10*s.*

THE PRESCRIBER'S PHARMACOPŒIA; containing all the Medicines in the British Pharmacopœia, arranged in Classes according to their Action, with their Composition and Doses. By a Practising Physician. Fifth Edition. 32mo. cloth, 2*s.* 6*d.*; roan tuck (for the pocket), 3*s.* 6*d.*

JOHN ROWLISON PRETTY, M.D.

AIDS DURING LABOUR, including the Administration of Chloroform, the Management of Placenta and Post-partum Hæmorrhage. Fcap. 8vo. cloth, 4*s.* 6*d.*

P. C. PRICE, F.R.C.S.

AN ESSAY ON EXCISION OF THE KNEE-JOINT. With Coloured Plates. With Memoir of the Author and Notes by Henry Smith, F.R.C.S. Royal 8vo. cloth, 14*s.*

LAKE PRICE.

PHOTOGRAPHIC MANIPULATION: A Manual treating of the Practice of the Art, and its various Applications to Nature. With numerous Engravings. Second Edition. Crown 8vo. cloth, 6*s.* 6*d.*

W. O. PRIESTLEY, M.D., F.R.C.P.

LECTURES ON THE DEVELOPMENT OF THE GRAVID UTERUS. 8vo. cloth, 5*s.* 6*d.*

GEORGE RAINEY, M.R.C.S.

ON THE MODE OF FORMATION OF SHELLS OF ANIMALS, OF BONE, AND OF SEVERAL OTHER STRUCTURES, by a Process of Molecular Coalescence, Demonstrable in certain Artificially-formed Products. Fcap. 8vo. cloth, 4*s.* 6*d.*

ROBERT RAMSAY AND J. OAKLEY COLES.

DEFORMITIES OF THE MOUTH, CONGENITAL AND ACCIDENTAL: Their Mechanical Treatment. With Illustrations. 8vo. cloth, 5*s.*

F. H. RAMSBOTHAM, M.D., F.R.C.P.

THE PRINCIPLES AND PRACTICE OF OBSTETRIC MEDICINE AND SURGERY. Illustrated with One Hundred and Twenty Plates on Steel and Wood; forming one thick handsome volume. Fifth Edition. 8vo. cloth, 22*s.*

THOMAS READE, M.B.T.C.D., L.R.C.S.I.

SYPHILITIC AFFECTIONS OF THE NERVOUS SYSTEM, AND A CASE OF SYMMETRICAL MUSCULAR ATROPHY; with other Contributions to the Pathology of the Spinal Marrow. Post 8vo. cloth, 5*s.*

THEOPHILUS REDWOOD, PH. D.

A SUPPLEMENT TO THE PHARMACOPŒIA: A concise but comprehensive Dispensatory, and Manual of Facts and Formulæ, for the use of Practitioners in Medicine and Pharmacy. Third Edition. 8vo. cloth, 22*s.*

DU BOIS REYMOND.

ANIMAL ELECTRICITY; Edited by H. Bence Jones, M.D., F.R.S. With Fifty Engravings on Wood. Foolscap 8vo. cloth, 6*s.*

J. RUSSELL REYNOLDS, M.D.LOND., F.R.C.P., F.R.S.

I.

EPILEPSY: ITS SYMPTOMS, TREATMENT, AND RELATION TO OTHER CHRONIC CONVULSIVE DISEASES. 8vo. cloth, 10*s.*

II.

THE DIAGNOSIS OF DISEASES OF THE BRAIN, SPINAL CORD, AND THEIR APPENDAGES. 8vo. cloth, 8*s.*

B. W. RICHARDSON, M.D., F.R.C.P., F.R.S.

ON THE CAUSE OF THE COAGULATION OF THE BLOOD. Being the Astley Cooper Prize Essay for 1856. With a Practical Appendix. 8vo. cloth, 16*s.*

WILLIAM ROBERTS, M.D., F.R.C.P.

AN ESSAY ON WASTING PALSY; being a Systematic Treatise on the Disease hitherto described as ATROPHIE MUSCULAIRE PROGRESSIVE. With Four Plates. 8vo. cloth, 5*s*.

C. H. F. ROUTH, D.M., M.R.C.P.

INFANT FEEDING, AND ITS INFLUENCE ON LIFE; Or, the Causes and Prevention of Infant Mortality. Second Edition. Fcap. 8vo. cloth, 6*s*.

W. H. ROBERTSON, M.D., M.R.C.P.

I.

THE NATURE AND TREATMENT OF GOUT. 8vo. cloth, 10*s*. 6*d*.

II.

A TREATISE ON DIET AND REGIMEN. Fourth Edition. 2 vols. 12*s*. post 8vo. cloth.

JAMES ROGERS, M.D.

ON THE PRESENT STATE OF THERAPEUTICS. With some Suggestions for placing it on a more scientific basis. 8vo. cloth, 6*s*. 6*d*.

JAMES ROGERS, M.D.

ON THE PRESENT STATE OF THERAPEUTICS. With some Suggestions for placing it on a more scientific basis. 8vo. cloth, 6*s*. 6*d*.

G. R. ROWE, M.D.

NERVOUS DISEASES, LIVER AND STOMACH COMPLAINTS, LOW SPIRITS, INDIGESTION, GOUT, ASTHMA, AND DISORDERS PRODUCED BY TROPICAL CLIMATES. With Cases. Sixteenth Edition. Fcap. 8vo. 2*s*. 6*d*.

J. F. ROYLE, M.D., F.R.S., AND F. W. HEADLAND, M.D., F.R.C.P.

A MANUAL OF MATERIA MEDICA AND THERAPEUTICS. With numerous Engravings on Wood. Fifth Edition. Fcap. 8vo. cloth, 12*s*. 6*d*.

W. B. RYAN, M.D.

INFANTICIDE: ITS LAW, PREVALENCE, PREVENTION, AND HISTORY. 8vo. cloth, 5*s*.

ST. GEORGE'S HOSPITAL REPORTS. Vols. I. to IV. 8vo. 7*s*. 6*d*.

T. P. SALT, BIRMINGHAM.

ON DEFORMITIES AND DEBILITIES OF THE LOWER EXTREMITIES AND THE MECHANICAL TREATMENT EMPLOYED IN THE PROMOTION OF THEIR CURE. With Plates. 8vo. cloth, 15*s*.

H. HYDE SALTER, M.D., F.R.C.P., F.R.S.

ASTHMA. Second Edition. 8vo. cloth, 10*s*.

W. H. O. SANKEY, M.D.LOND.

LECTURES ON MENTAL DISEASES. 8vo. cloth, 8*s*.

A. E. SANSOM, M.D.LOND., M.R.C.P.

I.

CHLOROFORM: ITS ACTION AND ADMINISTRATION. A Handbook. With Engravings. Crown 8vo. cloth, 5*s*.

II.

THE ARREST AND PREVENTION OF CHOLERA; being a Guide to the Antiseptic Treatment. Fcap. 8vo. cloth, 2*s*. 6*d*.

JOHN SAVORY, M.S.A.

A COMPENDIUM OF DOMESTIC MEDICINE, AND COMPANION TO THE MEDICINE CHEST; intended as a Source of Easy Reference for Clergymen, and for Families residing at a Distance from Professional Assistance. Seventh Edition. 12mo. cloth, 5*s*.

HERMANN SCHACHT.

THE MICROSCOPE, AND ITS APPLICATION TO VEGETABLE ANATOMY AND PHYSIOLOGY. Edited by FREDERICK CURREY, M.A. Post 8vo. cloth, 6*s*.

R. E. SCORESBY-JACKSON, M.D., F.R.S.E.

MEDICAL CLIMATOLOGY; or, a Topographical and Meteorological Description of the Localities resorted to in Winter and Summer by Invalids of various classes both at Home and Abroad. With an Isothermal Chart. Post 8vo. cloth, 12*s*.

R. H. SEMPLE M.D., M.R.C.P.

ON COUGH: its Causes, Varieties, and Treatment. With some practical Remarks on the Use of the Stethoscope as an aid to Diagnosis. Post 8vo. cloth, 4*s*. 6*d*.

E. J. SEYMOUR, M.D.

I.

ILLUSTRATIONS OF SOME OF THE PRINCIPAL DISEASES OF THE OVARIA: their Symptoms and Treatment; to which are prefixed Observations on the Structure and Functions of those parts in the Human Being and in Animals. On India paper. Folio, 16*s*.

II.

THE NATURE AND TREATMENT OF DROPSY; considered especially in reference to the Diseases of the Internal Organs of the Body, which most commonly produce it. 8vo. 5*s*.

THOS. SHAPTER, M.D., F.R.C.P.

THE CLIMATE OF THE SOUTH OF DEVON, AND ITS INFLUENCE UPON HEALTH. Second Edition, with Maps. 8vo. cloth, 10*s*. 6*d*.

E. SHAW, M.R.C.S.

THE MEDICAL REMEMBRANCER; OR, BOOK OF EMERGENCIES. Fifth Edition. Edited, with Additions, by JONATHAN HUTCHINSON, F.R.C.S. 32mo. cloth, 2*s*. 6*d*.

JOHN SHEA, M.D., B.A.

A MANUAL OF ANIMAL PHYSIOLOGY With an Appendix of Questions for the B.A. London and other Examinations. With Engravings. Foolscap 8vo. cloth, 5*s*. 6*d*.

CHARLES SHRIMPTON, M.D.

CHOLERA: ITS SEAT, NATURE, AND TREATMENT. With Engravings. 8vo. cloth, 4*s*. 6*d*.

FRANCIS SIBSON, M.D., F.R.C.P., F.R.S.

MEDICAL ANATOMY. With coloured Plates. Imperial folio. Complete in Seven Fasciculi. 5*s.* each.

E. H. SIEVEKING, M.D., F.R.C.P.

ON EPILEPSY AND EPILEPTIFORM SEIZURES: their Causes, Pathology, and Treatment. Second Edition. Post 8vo. cloth, 10*s.* 6*d.*

FREDERICK SIMMS, M.B., M.R.C.P.

A WINTER IN PARIS: being a few Experiences and Observations of French Medical and Sanitary Matters. Fcap. 8vo. cloth, 4*s.*

E. B. SINCLAIR, M.D., F.K.Q.C.P., AND G. JOHNSTON, M.D., F.K.Q.C.P.

PRACTICAL MIDWIFERY: Comprising an Account of 13,748 Deliveries, which occurred in the Dublin Lying-in Hospital, during a period of Seven Years. 8vo. cloth, 10*s.*

J. L. SIORDET, M.B.LOND., M.R.C.P.

MENTONE IN ITS MEDICAL ASPECT. Foolscap 8vo. cloth, 2*s.* 6*d.*

ALFRED SMEE, M.R.C.S., F.R.S.

GENERAL DEBILITY AND DEFECTIVE NUTRITION; their Causes, Consequences, and Treatment. Second Edition. Fcap. 8vo. cloth, 3*s.* 6*d.*

WM. SMELLIE, M.D.

OBSTETRIC PLATES: being a Selection from the more Important and Practical Illustrations contained in the Original Work. With Anatomical and Practical Directions. 8vo. cloth, 5*s.*

HENRY SMITH, F.R.C.S.

I.

ON STRICTURE OF THE URETHRA. 8vo. cloth, 7*s.* 6*d.*

II.

HÆMORRHOIDS AND PROLAPSUS OF THE RECTUM: Their Pathology and Treatment, with especial reference to the use of Nitric Acid. Third Edition. Fcap. 8vo. cloth, 3*s.*

III.

THE SURGERY OF THE RECTUM. Lettsomian Lectures. Second Edition. Fcap. 8vo. 3*s.* 6*d.*

JOHN SMITH, M.D., F.R.C.S.EDIN.

HANDBOOK OF DENTAL ANATOMY AND SURGERY, FOR THE USE OF STUDENTS AND PRACTITIONERS. Fcap. 3vo. cloth, 3*s.* 6*d.*

J. BARKER SMITH.

PHARMACEUTICAL GUIDE TO THE FIRST AND SECOND EXAMINATIONS. Crown 8vo. cloth, 6*s.* 6*d.*

W. TYLER SMITH, M.D., F.R.C.P.

A MANUAL OF OBSTETRICS, THEORETICAL AND PRACTICAL. Illustrated with 186 Engravings. Fcap. 8vo. cloth, 12*s.* 6*d.*

JOHN SNOW, M.D.

ON CHLOROFORM AND OTHER ANÆSTHETICS: THEIR ACTION AND ADMINISTRATION. Edited, with a Memoir of the Author, by Benjamin W. Richardson, M.D. 8vo. cloth, 10*s.* 6*d.*

J. VOSE SOLOMON, F.R.C.S.

TENSION OF THE EYEBALL; GLAUCOMA: some Account of the Operations practised in the 19th Century. 8vo. cloth, 4*s*.

STANHOPE TEMPLEMAN SPEER, M.D.

PATHOLOGICAL CHEMISTRY, IN ITS APPLICATION TO THE PRACTICE OF MEDICINE. Translated from the French of MM. BECQUEREL and RODIER. 8vo. cloth, reduced to 8*s*.

J. K. SPENDER, M.D.LOND.

A MANUAL OF THE PATHOLOGY AND TREATMENT OF ULCERS AND CUTANEOUS DISEASES OF THE LOWER LIMBS. 8vo. cloth, 4*s*.

PETER SQUIRE.

I.

A COMPANION TO THE BRITISH PHARMACOPÆIA. Seventh Edition. 8vo. cloth, 10*s*. 6*d*.

II.

THE PHARMACOPÆIAS OF THE LONDON HOSPITALS, arranged in Groups for easy Reference and Comparison. Second Edition. 18mo. cloth, 5*s*.

JOHN STEGGALL, M.D.

I.

A MEDICAL MANUAL FOR APOTHECARIES' HALL AND OTHER MEDICAL BOARDS. Twelfth Edition. 12mo. cloth, 10*s*.

II.

A MANUAL FOR THE COLLEGE OF SURGEONS; intended for the Use of Candidates for Examination and Practitioners. Second Edition. 12mo. cloth, 10*s*.

III.

FIRST LINES FOR CHEMISTS AND DRUGGISTS PREPARING FOR EXAMINATION AT THE PHARMACEUTICAL SOCIETY. Third Edition. 18mo. cloth, 3*s*. 6*d*.

WM. STOWE, M.R.C.S.

A TOXICOLOGICAL CHART, exhibiting at one view the Symptoms, Treatment, and Mode of Detecting the various Poisons, Mineral, Vegetable, and Animal. To which are added, concise Directions for the Treatment of Suspended Animation. Twelfth Edition. revised. On Sheet, 2*s*.; mounted on Roller, 5*s*.

FRANCIS SUTTON, F.C.S.

A SYSTEMATIC HANDBOOK OF VOLUMETRIC ANALYSIS; or, the Quantitative Estimation of Chemical Substances by Measure. With Engravings. Post 8vo. cloth, 7*s*. 6*d*.

W. P. SWAIN, F.R.C.S.

INJURIES AND DISEASES OF THE KNEE-JOINT, and their Treatment by Amputation and Excision Contrasted. Jacksonian Prize Essay. With 36 Engravings. 8vo. cloth, 9*s*.

J. G. SWAYNE, M.D.

OBSTETRIC APHORISMS FOR THE USE OF STUDENTS COMMENCING MIDWIFERY PRACTICE. With Engravings on Wood. Fourth Edition. Fcap. 8vo. cloth, 3*s*. 6*d*.

SIR ALEXANDER TAYLOR, M.D., F.R.S.E.

THE CLIMATE OF PAU; with a Description of the Watering Places of the Pyrenees, and of the Virtues of their respective Mineral Sources in Disease. Third Edition. Post 8vo. cloth, 7*s*.

ALFRED S. TAYLOR, M.D., F.R.C.P., F.R.S.

I.

THE PRINCIPLES AND PRACTICE OF MEDICAL JURISPRUDENCE. With 176 Wood Engravings. 8vo. cloth, 28*s*.

II.

A MANUAL OF MEDICAL JURISPRUDENCE. Eighth Edition. With Engravings. Fcap. 8vo. cloth, 12*s*. 6*d*.

III.

ON POISONS, in relation to MEDICAL JURISPRUDENCE AND MEDICINE. Second Edition. Fcap. 8vo. cloth, 12*s*. 6*d*.

THEOPHILUS THOMPSON, M.D., F.R.C.P., F.R.S.

CLINICAL LECTURES ON PULMONARY CONSUMPTION; with additional Chapters by E. Symes Thompson, M.D. With Plates. 8vo. cloth, 7*s*. 6*d*.

ROBERT THOMAS, M.D.

THE MODERN PRACTICE OF PHYSIC; exhibiting the Symptoms, Causes, Morbid Appearances, and Treatment of the Diseases of all Climates. Eleventh Edition. Revised by Algernon Frampton, M.D. 2 vols. 8vo. cloth, 28*s*.

SIR HENRY THOMPSON, F.R.C.S.

I.

STRICTURE OF THE URETHRA AND URINARY FISTULÆ; their Pathology and Treatment. Jacksonian Prize Essay. With Plates. Third Edition. 8vo. cloth, 10*s*.

II.

THE DISEASES OF THE PROSTATE; their Pathology and Treatment. With Plates. Third Edition. 8vo. cloth, 10*s*.

III.

PRACTICAL LITHOTOMY AND LITHOTRITY; or, An Inquiry into the best Modes of removing Stone from the Bladder. With numerous Engravings, 8vo. cloth, 9*s*.

IV.

CLINICAL LECTURES ON DISEASES OF THE URINARY ORGANS. With Engravings. Second Edition. Crown 8vo. cloth, 5*s*.

J. C. THOROWGOOD, M.D.LOND.

NOTES ON ASTHMA; its Nature, Forms and Treatment. Crown 8vo. cloth, 4*s*.

J. L. W. THUDICHUM, M.D., M.R.C.P.

I.

A TREATISE ON THE PATHOLOGY OF THE URINE, Including a complete Guide to its Analysis. With Plates, 8vo. cloth, 14*s*.

II.

A TREATISE ON GALL STONES: their Chemistry, Pathology, and Treatment. With Coloured Plates. 8vo. cloth, 10*s*.

E. J. TILT, M.D., M.R.C.P.

I.

ON UTERINE AND OVARIAN INFLAMMATION, AND ON THE PHYSIOLOGY AND DISEASES OF MENSTRUATION. Third Edition. 8vo. cloth, 12*s.*

II.

A HANDBOOK OF UTERINE THERAPEUTICS AND OF DISEASES OF WOMEN. Third Edition. Post 8vo. cloth, 10*s.*

III.

THE CHANGE OF LIFE IN HEALTH AND DISEASE: a Practical Treatise on the Nervous and other Affections incidental to Women at the Decline of Life. Second Edition. 8vo. cloth, 6*s.*

GODWIN W. TIMMS, M.D., M.R.C.P.

CONSUMPTION: its True Nature and Successful Treatment. Re-issue, enlarged. Crown 8vo. cloth, 10*s.*

ROBERT B. TODD, M.D., F.R.S.

I.

CLINICAL LECTURES ON THE PRACTICE OF MEDICINE. *New Edition, in one Volume, Edited by* Dr. Beale, *8vo. cloth,* 18*s.*

II.

ON CERTAIN DISEASES OF THE URINARY ORGANS, AND ON DROPSIES. Fcap. 8vo. cloth, 6*s.*

JOHN TOMES, F.R.S.

A MANUAL OF DENTAL SURGERY. With 208 Engravings on Wood. Fcap. 8vo. cloth, 12*s.* 6*d.*

JAS. M. TURNBULL, M.D., M.R.C.P.

I.

AN INQUIRY INTO THE CURABILITY OF CONSUMPTION, ITS PREVENTION, AND THE PROGRESS OF IMPROVEMENT IN THE TREATMENT. Third Edition. 8vo. cloth, 6*s.*

II.

A PRACTICAL TREATISE ON DISORDERS OF THE STOMACH with FERMENTATION; and on the Causes and Treatment of Indigestion, &c. 8vo. cloth, 6*s.*

R. V. TUSON, F.C.S.

A PHARMACOPŒIA; including the Outlines of Materia Medica and Therapeutics, for the Use of Practitioners and Students of Veterinary Medicine. Post 8vo. cloth, 7*s.*

ALEXR. TWEEDIE, M.D., F.R.C.P., F.R.S.

CONTINUED FEVERS: THEIR DISTINCTIVE CHARACTERS, PATHOLOGY, AND TREATMENT. With Coloured Plates. 8vo. cloth, 12*s.*

DR. UNDERWOOD.

TREATISE ON THE DISEASES OF CHILDREN. Tenth Edition, with Additions and Corrections by Henry Davies, M.D. 8vo. cloth, 15*s.*

VESTIGES OF THE NATURAL HISTORY OF CREATION. Eleventh Edition. Illustrated with 106 Engravings on Wood. 8vo. cloth, 7*s.* 6*d.*

J. L. C. SCHROEDER VAN DER KOLK.

THE PATHOLOGY AND THERAPEUTICS OF MENTAL DISEASES. Translated by Mr. RUDALL, F.R.C.S. 8vo. cloth, 7*s.* 6*d.*

MISS VEITCH.

HANDBOOK FOR NURSES FOR THE SICK. Crown 8vo. cloth, 2*s.* 6*d.*

ROBERT WADE, F.R.C.S.

STRICTURE OF THE URETHRA, ITS COMPLICATIONS AND EFFECTS; a Practical Treatise on the Nature and Treatment of those Affections. Fourth Edition. 8vo. cloth, 7*s.* 6*d.*

ADOLPHE WAHLTUCH, M.D.

A DICTIONARY OF MATERIA MEDICA AND THERAPEUTICS. 8vo. cloth, 15*s.*

J. WEST WALKER, M.B.LOND.

ON DIPHTHERIA AND DIPHTHERITIC DISEASES. Fcap. 8vo. cloth, 3*s.*

CHAS. WALLER, M.D.

ELEMENTS OF PRACTICAL MIDWIFERY; or, Companion to the Lying-in Room. Fourth Edition, with Plates. Fcap. cloth, 4*s.* 6*d.*

HAYNES WALTON, F.R.C.S.

SURGICAL DISEASES OF THE EYE. With Engravings on Wood. Second Edition. 8vo. cloth, 14*s.*

E. J. WARING, M.D., M.R.C.P.LOND.

I.

A MANUAL OF PRACTICAL THERAPEUTICS. Second Edition, Revised and Enlarged. Fcap. 8vo. cloth, 12*s.* 6*d.*

II.

THE TROPICAL RESIDENT AT HOME. Letters addressed to Europeans returning from India and the Colonies on Subjects connected with their Health and General Welfare. Crown 8vo. cloth, 5*s.*

A. T. H. WATERS, M.D., F.R.C.P.

I.

DISEASES OF THE CHEST. CONTRIBUTIONS TO THEIR CLINICAL HISTORY, PATHOLOGY, AND TREATMENT. With Plates. 8vo. cloth, 12*s.* 6*d.*

II.

THE ANATOMY OF THE HUMAN LUNG. The Prize Essay to which the Fothergillian Gold Medal was awarded by the Medical Society of London. Post 8vo. cloth, 6*s.* 6*d.*

III.

RESEARCHES ON THE NATURE, PATHOLOGY, AND TREATMENT OF EMPHYSEMA OF THE LUNGS, AND ITS RELATIONS WITH OTHER DISEASES OF THE CHEST. With Engravings. 8vo. cloth, 5*s.*

ALLAN WEBB, M.D., F.R.C.S.L.

THE SURGEON'S READY RULES FOR OPERATIONS IN SURGERY. Royal 8vo. cloth, 10*s.* 6*d.*

J. SOELBERG WELLS.

I.

A TREATISE ON THE DISEASES OF THE EYE. With Coloured Plates and Wood Engravings. 8vo. cloth, 24*s.*

II.

ON LONG, SHORT, AND WEAK SIGHT, and their Treatment by the Scientific Use of Spectacles. Third Edition. With Plates. 8vo. cloth, 6*s.*

T. SPENCER WELLS, F.R.C.S.

SCALE OF MEDICINES FOR MERCHANT VESSELS. With Observations on the Means of Preserving the Health of Seamen, &c. &c. Seventh Thousand. Fcap. 8vo. cloth, 3*s.* 6*d.*

CHARLES WEST, M.D., F.R.C.P.

LECTURES ON THE DISEASES OF WOMEN. Third Edition. 8vo. cloth, 16*s.*

J. A. WHEELER.

HAND-BOOK OF ANATOMY FOR STUDENTS OF THE FINE ARTS. With Engravings on Wood. Fcap. 8vo., 2*s.* 6*d.*

JAMES WHITEHEAD, M.D., M.R.C.P.

ON THE TRANSMISSION FROM PARENT TO OFFSPRING OF SOME FORMS OF DISEASE, AND OF MORBID TAINTS AND TENDENCIES. Second Edition. 8vo. cloth, 10*s.* 6*d.*

C. J. B. WILLIAMS, M.D., F.R.C.P., F.R.S.

PRINCIPLES OF MEDICINE: An Elementary View of the Causes, Nature, Treatment, Diagnosis, and Prognosis, of Disease. With brief Remarks on Hygienics, or the Preservation of Health. The Third Edition. 8vo. cloth, 15*s.*

FORBES WINSLOW, M.D., D.C.L.OXON.

OBSCURE DISEASES OF THE BRAIN AND MIND. Fourth Edition. Carefully Revised. Post 8vo. cloth, 10*s.* 6*d.*

T. A. WISE, M.D., F.R.C.P.EDIN.

REVIEW OF THE HISTORY OF MEDICINE AMONG ASIATIC NATIONS. Two Vols. 8vo. cloth, 16*s.*

ERASMUS WILSON, F.R.C.S., F.R.S.

I.

THE ANATOMIST'S VADE-MECUM: A SYSTEM OF HUMAN ANATOMY. With numerous Illustrations on Wood. Eighth Edition. Foolscap 8vo. cloth, 12*s.* 6*d.*

II.

ON DISEASES OF THE SKIN: A SYSTEM OF CUTANEOUS MEDICINE. Sixth Edition. 8vo. cloth, 18*s.*

THE SAME WORK; illustrated with finely executed Engravings on Steel, accurately coloured. 8vo. cloth, 36*s.*

III.

HEALTHY SKIN: A Treatise on the Management of the Skin and Hair in relation to Health. Seventh Edition. Foolscap 8vo. 2*s.* 6*d.*

IV.

PORTRAITS OF DISEASES OF THE SKIN. Folio. Fasciculi I. to XII., completing the Work. 20*s.* each. The Entire Work, half morocco, £13.

V.

THE STUDENT'S BOOK OF CUTANEOUS MEDICINE AND DISEASES OF THE SKIN. Post 8vo. cloth, 8*s.* 6*d.*

VI.

LECTURES ON EKZEMA AND EKZEMATOUS AFFECTIONS; with an Introduction on the General Pathology of the Skin, and an Appendix of Essays and Cases. 8vo. cloth, 10*s.* 6*d.*

VII.

ON SYPHILIS, CONSTITUTIONAL AND HEREDITARY; AND ON SYPHILITIC ERUPTIONS. With Four Coloured Plates. 8vo. cloth, 16*s.*

VIII.

A THREE WEEKS' SCAMPER THROUGH THE SPAS OF GERMANY AND BELGIUM, with an Appendix on the Nature and Uses of Mineral Waters. Post 8vo. cloth, 6*s.* 6*d.*

IX.

THE EASTERN OR TURKISH BATH: its History, Revival in Britain, and Application to the Purposes of Health. Foolscap 8vo., 2*s.*

G. C. WITTSTEIN.

PRACTICAL PHARMACEUTICAL CHEMISTRY: An Explanation of Chemical and Pharmaceutical Processes, with the Methods of Testing the Purity of the Preparations, deduced from Original Experiments. Translated from the Second German Edition, by STEPHEN DARBY. 18mo. cloth, 6*s.*

HENRY G. WRIGHT, M.D., M.R.C.P.

I.

UTERINE DISORDERS: their Constitutional Influence and Treatment. 8vo. cloth, 7*s.* 6*d.*

II.

HEADACHES; their Causes and their Cure. Fourth Edition. Fcap. 8vo. 2*s.* 6*d.*

CHURCHILL'S SERIES OF MANUALS.

Fcap. 8vo. cloth, 12*s.* 6*d.* each.

"We here give Mr. Churchill public thanks for the positive benefit conferred on the Medical Profession, by the series of beautiful and cheap Manuals which bear his imprint."—*British and Foreign Medical Review.*

AGGREGATE SALE, 154,000 COPIES.

ANATOMY. With numerous Engravings. Eighth Edition. By Erasmus Wilson, F.R.C.S., F.R.S.

BOTANY. With numerous Engravings. By Robert Bentley, F.L.S., Professor of Botany, King's College. and to the Pharmaceutical Society.

CHEMISTRY. With numerous Engravings. Tenth Edition, 14*s.* By George Fownes, F.R.S., H. Bence Jones, M.D., F.R.S., and Henry Watts, B.A., F.R.S.

DENTAL SURGERY. With numerous Engravings. By John Tomes, F.R.S.

EYE, DISEASES OF. With coloured Plates and Engravings on Wood. By C. Macnamara.

MATERIA MEDICA. With numerous Engravings. Fifth Edition. By J. Forbes Royle, M.D., F.R.S., and F. W. Headland, M.D., F.R.C.P.

MEDICAL JURISPRUDENCE. With numerous Engravings. Eighth Edition. By Alfred Swaine Taylor, M.D., F.R.S.

PRACTICE OF MEDICINE. Second Edition. By G. Hilaro Barlow, M.D., M.A.

The **MICROSCOPE** and its **REVELATIONS.** With numerous Plates and Engravings. Fourth Edition. By W. B. Carpenter, M.D., F.R.S.

NATURAL PHILOSOPHY. With numerous Engravings. Sixth Edition. By Charles Brooke, M.B., M.A., F.R.S. *Based on the Work of the late Dr. Golding Bird.*

OBSTETRICS. With numerous Engravings. By W. Tyler Smith, M.D., F.R.C.P.

OPHTHALMIC MEDICINE and SURGERY. With coloured Plates and Engravings on Wood. Third Edition. By T. Wharton Jones, F.R.C.S., F.R.S.

PATHOLOGICAL ANATOMY. With numerous Engravings. By C. Handfield Jones, M.B., F.R.S., and E. H. Sieveking, M.D., F.R.C.P.

PHYSIOLOGY. With numerous Engravings. Fourth Edition. By William B. Carpenter, M.D., F.R.S.

POISONS. Second Edition. By Alfred Swaine Taylor, M.D., F.R.S.

PRACTICAL ANATOMY. With numerous Engravings. Second Edition. By Christopher Heath, F.R.C.S.

PRACTICAL SURGERY. With numerous Engravings. Fourth Edition. By Sir William Fergusson, Bart., F.R.C.S., F.R.S.

THERAPEUTICS. Second Edition. By E. J. Waring, M.D., M.R.C.P.

Printed by Blanchard & Sons, 62, Millbank Street, Westminster.